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AUGUST 1988

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CRIB CARDS THE AMIGA AT A GLANCE

This month sees the final part of the AmigaBASIC series. These specially commissioned Crib cards, free with **Amiga User International** each month, go on to form a full and highly useful quick reference guide for the Amiga. More Crib Cards next month.

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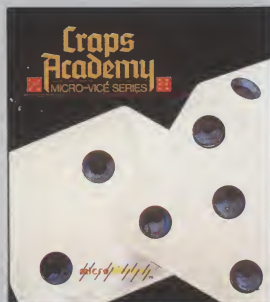
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THE AMIGA DIMENSION

THAT'S ENTERTAINMENT

I recently received through the post a brochure offering "The Amiga Games Pack". It wasn't only offering entertainment software but an Amiga 500 too. With the lowering of the price of the Amiga 500 – to an official £399 in the UK – obviously more and more "games-only" users, it is being said, will be entering the Amiga Dimension. At the same time, there is beginning, in the software houses around the world, a debate about whether this price fall and extra encouragement for games will damage the perception of the Amiga as a

"serious" or even business machine.

Undoubtedly, when the Amiga began, at its early high price, the major growth took place in the non-games area. Now, as can be seen from this and recent issues of **AUI**, all the major games companies are jumping on the 16 Bit bandwagon. Yet as can also be noticed from this **AUI**, the vast preponderance of new products and features are still enlarging aspects of the Amiga Dimension that are not games, even if they may be classified as "Entertainment", which indeed is how, most of what is done with

an Amiga could be described.

So, though the price of an Amiga may go down – and the price of software too, though that is a subject which deserves a discussion of its own – it does not seem, in spite of some people's worries, that the Amiga Dimension is showing much sign of declining into just "playtime on a souped-up games machine". Those who want only that will probably spend under £100 and buy a games console anyway.

Antony Jacobson, Managing Editor and Publisher

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The Flintstones

Microlussions have announced the licensing of Hanna-Barbera's world famous cartoon characters. Microlussions' President, James A. Steinert, signed the licensing contract with Hanna-Barbera productions, the world's leading producer of animated entertainment. Some of the cartoon characters included in the deal are the Flintstones, the stone-age family who star in one of the most durably popular cartoon series in syndication; The Jetsons, the space-age family currently marking its 25th anniversary with both a top rated weekly series in the USA and an up-coming television movie; Scooby-Doo, the cowardly Great Dane in the hit weekly

series; Johnny Quest, the action-adventure series still alive after 24 years in syndication. "This is the first of many such licences Microlussions plan to close" stated Mr Steinert. "We'll bring to the computer what people want to see. Otherwise, we'll create the tools so that the public can make their own." He was referring to the soon-to-be-released Photon Video series, the full-on animation software. The initial products, the Flintstones, the Jetsons, Scooby-Doo and Johnny Quest created by Microlussions, will be available towards the end of the year. They tell us the games will keep the integrity of all characters and story plots. Arcade-style and/or an adventure-style game will be created for each of the Hanna-Barbera characters.

AC/BASIC compiler V1.3

Absoft have now begun shipping Version 1.3 of their AC/BASIC compiler for the Amiga. AC/BASIC is the BASIC compiler that is compatible with the AmigaBASIC interpreter bundled with the Amiga. Improvements in the new version include: fixes to several known bugs, 100% compatibility with AmigaBASIC statements and functions, plus new examples including how to access HAM graphics from BASIC. Several components of the runtime library including random file I/O, fielded string processing and a number of floating point arithmetic routines were completely rewritten. A complete spreadsheet, written in AC/BASIC, is also included as a detailed example of how to write sophisticated application programs that take advantage of the Amiga's ROM routines.

All users of AC/BASIC who were registered before 16th July 1988 will be sent a V1.3 upgrade at no charge. Anyone registered after that date will be charged a \$50 upgrade fee.

Caught in the act

Much concern has been expressed in the office of the UK's data protection registrar, Eric Howe. It seems that the long awaited and much talked about Data Protection Act is being used by unscrupulous employers to enquire into prospective employees' pasts. On filling in a job application, candidates are asked to exercise their right to access Police information. This information must then be handed over to the employer. Not only have private companies been misusing the Act in this way but it has been reported that some local authorities will not issue taxi licences until records have been provided. Nigel Waters, the assistant registrar, revealed that the nine or ten complaints they have had to date are probably only "the tip of the iceberg". The blatant misuse of the Act in this way is, obviously, "contrary to the objectives of data protection" and Mr Howe is to look into the problem as part of a review of the legislation planned for this summer.

Postscript Compatibility for ProWrite

New from New Horizons Software is ProScript, a program which brings PostScript compatibility to their best selling Amiga word processor, ProWrite. ProScript translates ProWrite files into PostScript, which can then be either sent directly to a PostScript compatible printer or saved as a file for later printing. "PostScript is the industry standard method of producing high quality printed output and is rapidly gaining in popularity among Amiga users," said James Bayless, President of New Horizons Software. "By providing PostScript support for ProWrite, we hope to further extend this trend. With ProScript and ProWrite we are showing how you can obtain high quality results without spending hundreds of dollars on expensive and hard to use desktop publishing programs."

ProScript takes the documents created with ProWrite, which is a multiple font, colour

graphics word processor, and translates them into a form that can be used by a PostScript compatible printer. The results of this translation can be sent to the printer directly, or saved to a file for later printing. If the document uses PostScript fonts (which are included with ProScript), the printer will use the actual fonts that are resident in the printer for the highest quality results. If a non PostScript font is used, a bitmap image of the font will be downloaded to the printer. All colour graphics in the ProWrite document are printed as well, with the colours being first converted into shades of grey.

In addition, ProScript has several options that give greater control over the appearance of the printed result. There are options to reduce or enlarge the printout, choose the paper size, print only even or odd pages and control the number of grey shades used for graphics. ProScript is scheduled to be released in the third quarter of 1988.

Price: \$49.95

Contact: Karen Bayless, New Horizons Software Inc, PO Box 43167, Austin, TX 78745. Tel: (512) 328-6650.



Powerplay it again, Sam

A new version of Amiga "Powerplay; The Game of the Gods" will be released shortly. A spokesman for Arcana said, "It became more and more obvious to us that Amiga owners were no longer satisfied with games ported over from the Atari and that it was time for someone to produce a game solely for the Amiga,

using all of its graphic capabilities. We also looked very carefully at what reviewers said about the original game and did our best to put right any criticisms they had. We really think that all the time and effort that has been put into the new version is worthwhile. The visual differences are tremendous." Arcana are now looking into producing more question files for the game, possibly area specific such as sport, TV and films etc. Price: £19.95



VDUs – Are pregnant women at risk?

A new survey published in the June issue of "The American Journal of Industrial Medicine" conducted by the Kaiser Medical Care Programme of Oakland, California, involving 1,600 pregnant women revealed that pregnant women who operate VDUs for more than 20 hours a week suffered twice as many miscarriages as those involved in other office work.

Experts believe that Electro Magnetic Radiation emitted by VDUs alters and disrupts

cellular development in the embryo.

A new British product can now protect VDU operators from electro magnetic radiation. Microshield is a smock manufactured from an innovative new material which has remarkable protective qualities, shielding operators from up to 99% of radiation emitted from most VDUs. Fashioned for the eighties, it is light, comfortable, easy to wear and washable and can give operators peace of mind in those vital early weeks of pregnancy or when pregnancy is anticipated.

Price: £55.00 + VAT
Contact: Meditrade Marketing, PO Box 15, Emsworth, Hampshire PO10 7YH. Tel: 0234 377717.

Illegal Library

Many people have been following the case of Jeffrey Batty from Clacton, England, who has been hiring out computer programs on the same basis as a video library. Customers were given a catalogue, to choose from, containing over 6,000 items. Trading under the name Orion Software, many of the programs he offered were pirate copies. The operation

was raided by the Federation Against Software Theft (FAST) after warnings had been issued to him. Bob Hay of FAST estimated that the recovered stocks of software were valued at £15,000. Batty pleaded guilty to 12 specimen charges of copyright infringement under section 21 of the 1956 Copyright Act and was fined £5,000, with £100 costs. The case is the latest of its kind in the UK and resulted in the heaviest fine to date. However, one offender was jailed for a year.

Lattice C Plus Plus

Lattice Inc. are now offering Lattice C++ for the Amiga. It is a 'pre-processor' which translates the C++ language into C source code which is then compiled by the Lattice AmigaDOS C compiler and linked to create an executable program. A 'driver', similar to the LC driver in the Lattice AmigaDOS C compiler, is provided to allow translating, compiling and linking in one step.

"Because C++ is a superset of the C language, it allows greater data abstraction and object-oriented programming while it provides all of the C language's flexibility and efficiency," said Wayne Narker, Lattice Vice President of sales and marketing. As C++ is object-oriented, it is particularly well suited for the Amiga where the operating system is defined in terms of objects.

By supporting a feature known as 'inheritance' C++ allows simple objects to be expanded into more complex objects which can then be expanded still further to build objects of increasing functionality. (This is the same principle the Amiga's operating system utilises to allow window based multi-tasking with less than one Megabyte of memory.) By mapping the Amiga's data structures using this inheritance feature, the Lattice C++ package is claimed to eliminate the confusing process of data type casting while retaining the advantages of data type checking.

Lattice say C++ reduces program development time with features to avoid other common errors in C programs. For example, one frequent error in a C program is a mismatch between the type of function argument used and the type expected by the function. C++ can reduce many of these mismatches by allowing the programmer to define functions that have different types or numbers of arguments. It can also check an argument type and, if necessary, make a type conversion based on programmer-specified conversion functions.

The Lattice C++ language allows programmers to declare in-line functions for small frequently-called operations. These in-line functions can replace macros and utilise the same semantics as other functions, yet retain the code size and run-time efficiency of a macro.

The Lattice C++ requires 1.5MB of memory and two floppy drives; a hard disk is recommended.

Price: \$500

Contact: Lattice Inc., 2500 South Highland Avenue, Lombard, IL 60148. Tel: (312) 916-1600.

Microllusions see the light

Microllusions have announced that they will join forces with American Liquid Light Inc, a graphics peripheral manufacturer to construct and distribute a graphic hardware line for the Amiga 2000.

American Liquid Light Inc are also the makers of the Imprint film reading system for the Amiga and the high end line of video products they have developed in conjunction with Microllusions should be available by the end of the summer. The move will give the two parties worldwide distribution of video hardware products on the Amiga and provide an edge in the market as a stronger selling point for Microllusions' full line of art and animation products such as Photon Paint and Photon Video. As the President of Microllusions, James A Steinert stated: "With the addition of this line we will be able to provide turnkey professional art and animation systems at a cost far below the competition."

The two companies will be working together in development, Microllusions providing the software interface technology and American Liquid Light providing the hardware technology. All of these products are being designed to make it easy for other software publishers to adapt their products through a development kit that will be available soon.

Contact: Microllusions, 17408 Chatsworth Street, Granada Hills, CA91344. Tel: (818) 360-3715.

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Deluxe Photolab

Electronic Arts have announced the release of Deluxe Photolab, their latest graphics program in the Deluxe series. Deluxe Photolab offers a paint program which works in all Amiga graphics modes and features an image processing program and a print program which allow you to print out art in sizes of up to three metres by three metres.

The program can handle images of up to twenty times larger than the Amiga screen – as large as the total memory will allow. Deluxe Photolab also offers the facility to work between multiple screens simultaneously, allowing cut and paste between them. The second element of Deluxe

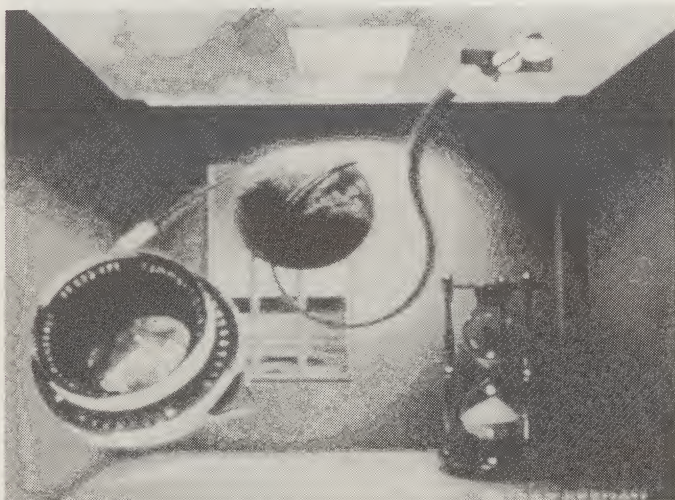
Photolab is a colour image processing program designed to give you control over the colour palette, moving, swapping, merging colours, as well as pixel population counts, image processing, colour separations and other special effects.

The print function of Deluxe Photolab will allow any picture in any resolution to be printed out in any size up to three metres by three metres. Print-outs wider than one sheet of paper are printed in strips that must be pasted together.

Deluxe Photolab is compatible with the Deluxe series of products as well as any other program which uses the IFF standard.

Price: £69.95

Contact: Electronic Arts, 11-49 Station Road, Langley, Berks SL3 8YN, England. Tel: 0753 46465.



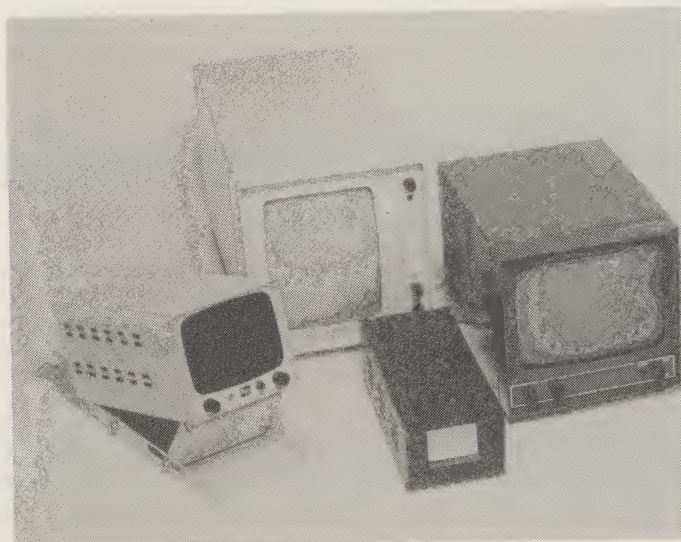
New Monitor Range

The Bluebest range of video monitors has just been updated and rationalised to provide a standard range of ruggedised monitors. These the basis of an off-the-shelf product which will meet 90% of customers' immediate needs.

Initially available in 9", 12" and 19" sizes, cased or 19" rack mounted, these products will complement the existing range of products which extend from 3" to 24" and many of which have NATO code numbers. Using readily available white or green phosphor tubes, line rates from 15KHz to 32KHz are available in portrait and landscape versions

with analogue and TTL inputs. Further options such as bonded face panels can also be supplied.

Contact: Russet Output De-



New Director for Abacus

Jim Oldfield, a well known writer and author, has been appointed as director of marketing for Abacus. Jim has written extensively for many consumer magazines and was one of the original founders of the Midnight Gazette. He is a popular speaker among user groups and at trade shows, both in the US and overseas. His personable style and down-to-earth manner make him a favourite among users worldwide. Oldfield is a Sysop for several on-line services and a lecturer on the Q-link forums.

Most recently, Jim oversaw the operations of a well-known Midwest distributor in central Illinois. He has also managed computer and software retail operations.

Arnie Lee, President of Abacus, notes, "We've been talking to Jim for several months about joining our company. We finally convinced him that Grand Rapids was a fine place to move his family. Because Jim has known Abacus for many years, he'll be able to help us immediately. We're confident that Jim's strong qualifications and extensive contacts in the PC industry will help us grow even more in the coming years."

vices Ltd, Unit 2, Rose Kiln Lane, Reading, Berkshire RG2 0HP, England. Tel: (0734) 868147.

Plonker Box

How many times have you mislaid or damaged important disks by putting them down on your crowded desk? With today's lengthy programs increasingly being sold on two or more disks the need for constant swapping is growing all the time. However, Little Office have come up with the easy answer to this irritating problem. The Plonker Box is a neat little plastic disk holder which attaches to your computer system (or most other smooth surfaces) by means of a self adhesive strip. It is designed to hold those few disks which are in current use. Disks of any standard size may be simply 'plonked in' until needed.

Price: £1.99

Contact: Little Office, The Business Centre, Claughton Road, Birkenhead, Merseyside L41 6EY. Tel: 051-666 1190.

Edinburgh Festival

Since its introduction, the Edinburgh International Festival has grown in reputation and now enjoys international status as one of the leading arts festivals in the world. Against this backdrop, there will be featured for the first time, Amiga computer animation in the form of an animation workshop and exhibition. In addition to this, the Amiga Centre Scotland are organising an Animation Competition. The workshop will be open from the 11th to the 20th August. The competition will be open to any Amiga user. The entries to the competition can be either on disk or PAL videotape. The closing date for entries is 31st July. The finalists' entries will be on display at the Computer Animation Exhibition.

For more details contact: Iain Anderson, Animation Competition, The Amiga Centre Scotland, 4 Hart Street Lane, Edinburgh EH1 3RN, Scotland. Tel: 031-557 4242.

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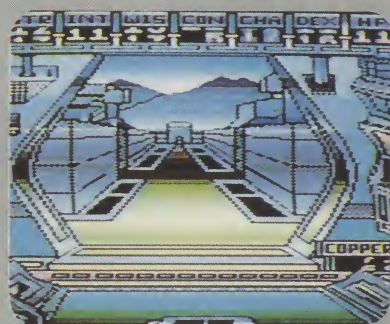
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TURBO

The Juggler, Newton's Cradle, Eric Graham is not the only genius - Ray Tracing gets a turbo-charge and Peter Lee hurries in with the latest developments.



Mention ray tracing to most Amiga people and eyes glaze over. This may be due to the fact that in the past it took forever to accomplish. You could leave a picture to be generated by the computer, grab a night's sleep and, if you were lucky, wake up to a finished screen. And, if my experiences are anything to go by, it probably will not be the right screen you were trying to set in the first place... It is unfortunate that the lightning-fast Amiga is turned into a snail by the massive calculations needed to create a ray-traced art screen, because the results of patience can be rewarded by some of the finest images you can see on any home computer: the famous juggler demo, moving rocking chair and superb Newton's Cradle were all created in this way.

Ray tracing relies on heavy duty maths but there is no need to be alarmed - the Amiga takes care of the number crunching and leaves the

artistic side of things to the user. Out of this complexity comes Art, as the software calculates with absolute precision the points of light on any surface, reflecting and refracting images to create a 3D world on a flat monitor screen. But it all takes time - lots of it - or at least it did until Impulse supercharged their old workhorse, Silver, and created a Turbo version. It still carries on the excellent tradition of the established program -



superb control and a stunning integrated animation designer - but the program has been revamped to give both added features and a massive leap in terms of time-saving. What took six hours in the old Silver now takes just 40 minutes in the Turbo version. This astonishing difference has been brought about by some innovative programming.

Impulse have adopted a new technique called Octree which in simple terms splits the screen into a small series of squares and works on each until the job is finished. If there is nothing to work on in an area it will move onto the next. However, highly complex designs will still allow you to go out for the afternoon (around four hours), whereas before, using Silver, you could have gone on a day's outing to the coast (15 hours)!

Turbo Silver is supplied on one unprotected (though security stamped) jam-packed disk. Our copy came with a disk containing the old version too, a manual for that together with addenda notes and temporary documentation for the Turbo upgrade; not a pretty sight to wade through, though I would expect more professional documentation to be shipped with the product very soon.

It requires at least 1 meg of memory and, as it uses a very useful system of virtual disk memory (which means it stores data onto floppy instead of in RAM from time to time), an external drive is preferred.

Turbo Silver's world is three dimensional; as well as width and height, objects have depth and any item you create must have dimensions in these planes, which are labelled X, Y and Z. I was surprised to find that Y is the depth plane and not Z which is designated the vertical - confusing to people used to addressing normal flat screen co-ordinates in terms of X and Y. Objects are defined using the program's editor, which allows access to the powerful 3D screen designer and also the animation suite. Making movies is simple but first you need to create some objects on the work surface. It is here that your imagination needs to work overtime.

Objects are shown as wire-frame shapes on a less than stunning display screen. While you are creating you must be able to visualise the effect you are aiming for. However,

SILVER

you can change the point of view, including seeing the scene from above, to ensure your spatial positioning is correct. On a number of occasions, though, selecting this option crashed the computer – something Impulse need to correct quickly.

The program comes equipped with some pre-defined shapes – things such as sphere, tube and triangle – which with careful manipulation can be altered and appended to create any object you desire. Each of these so-called primitives (apart from the sphere) can be edited, though it is possible to create any shape you can imagine, an exercise made simple by spin and extrude options. The point of view of the finished display is dependent on the positioning of a 'camera' – a simple animation technique would be to keep the objects and light source identical in consecutive cells but pan around with the camera in a sort of fly-past. The camera function is very flexible, allowing you to simulate wide or telephoto lenses in any axis and you also have the opportunity to picture a scene from below (how about a trout's-eye view of the river-bank?). The light source can be positioned in a similar manner.

because Turbo Silver incorporates some effects which, given a lot of time and experimentation, create the type of visual magic which is the hallmark of promotional videos. For instance, if you create some frames of animation

"It is possible to create any shape you can imagine, an exercise made simple by spin and extrude options"

– perhaps with a digitiser or an art program – you can load the sequence into Turbo animation cells and have the screens mapped as the floor in consecutive frames. Picture it – moving scenes on a terrain which fades to infinity, reflecting in hovering glass spheres. There are many hours of hard work involved but the potential is there to be exploited.

The animation side of the program is made easier by a number of options which can automatically generate cells in which objects take a path specified by the user; again, a lot of

major hurdle you just have to leap when your confidence with the program has grown.

Another knock-out feature is the creation of lighting attributes which dictate how any of your objects will bend or refract light. The common ones are available in a menu – air, water, crystal and glass. There is no stopping this program – if you want to view the world through ruby spectacles you can edit the refraction value accordingly (ruby by the way has an index of 1.77, emerald 1.57 and diamond 2.42). However, the higher the index, the longer it takes for the program to calculate the display. A picture of crystal chess pieces on a reflective board which is supplied on the disk took 50 minutes to generate.

All the Amiga's colours are available and all screen resolutions, including interlace. I am also pleased to say that the program works in PAL display. Control of the program is either through a wide selection of pull-down menus or by Amiga/key combinations; there is a vast amount to learn because the program is so wide-ranging and comprehensive. Included on the disk is a player program for showing animations and a screen display utility which can be called from Workbench.

CONCLUSION

Patience may be a virtue but it is a necessity here. Turbo Silver does not take kindly to slackers – be prepared for hard work and disappointments – but also be ready for some incredible photographic-quality artwork. The documentation as supplied with our copy (admittedly an early release) needs tidying up to make the complex features easier to learn. The time factor will still influence many people – several hours' solid computing to generate some complicated scenes – but when you consider it took 15 hours before Turbo, you begin to see the scale of improvement. Complex, with an amazing array of features, it is an outstanding, if specialist, graphics and animation suite which requires lots of concentration and dedication. Definitely not for those with short attention spans!

Price: £139.95

P.L.

Contact: HB Marketing Ltd, Brooklyn House, 22 The Green, West Drayton, Middx UB7 7PQ. (0895) 444433.



Turbo Silver allows you to wrap an IFF picture around any object and lets you save any ray-traced cell in this format for use in other art packages. This really is only the half of it,

brain-work is needed to design the kind of effect you are after and there are so many facets of this technique to get precisely right that launching into anything moderately complex is a

CHATEAU'ED DREAMS

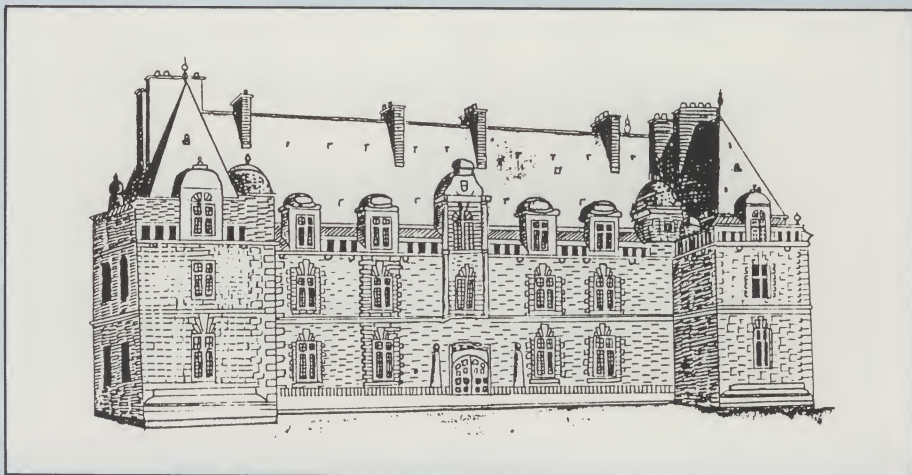
Anthony Mael enters the soignée world of software à la française

There is no denying it... the French have un certain style. Visit an American software company and you enter the hi-tech trading estates of California's Silicon Valley. Seek out a British developer and you may end up in the suburban respectability of London's Muswell Hill (see this **AUI's** Heard It On The Grapevine for confirmation of that!). But get an invitation to probably the most important software house in France and you are immersed in a different and very much more elegant environment, nothing less, in fact, than a Chateau – a castle, French style.

The company enjoying these gracious surroundings – the Chateau has a mere 700 acres as its grounds – is UBISOFT. It would not be surprising if you ask UBI-who? Even UBISOFT admit they have not been too well presented to any computer audience outside France, though they have there established a reputation for quality games that has given them a sizeable share of the market. They have chosen to confine their releases to their home country until they had something that stood up to international standards. Now they have chosen to go public with some interesting games they have under development partly because they are so confident that they are onto something good but also because they have just moved into what must be the most impressive context in which any computer games are being created – the aforementioned Chateau.



Chateau Gree de Callac – to give it its full name – is in Brittany and now houses some 20 programmers and a mass of computer equipment – Amigas, PCs, 64s and so on. This all looks rather incongruous in the aristocratic halls of the vast early nineteenth-century building. There are antlers, wild boars' heads and ancient paintings still on the walls. Beneath them an international, though



largely French, pack of programmers beaver away at the current seven titles that UBISOFT is promising to launch this year.

They are certainly creating a wide variety of interesting games. Everything from a medieval arcade adventure to an improved Gauntlet clone. All it is claimed to be launched on the Amiga, probably before the end of 1988. With US distribution through Epyx, they look to gain a big audience across the Atlantic.

Their arcade adventure certainly looks impressive. Called Iron Lord, it combines many of the best things that made Defender of the Crown and Faery Tale so successful. If that does not make it terrifically original, it will not lessen the enjoyment of those who see its excellent graphics – all animated galloping horses and evil-looking inn companions with plenty of archery, arm-wrestling, sword-play and even a visit to the local brothel – all in the quest to overcome a treacherous uncle.

Another very interesting game under development is Final Command – a space drama which has what seems at this stage a very strong scenario that requires you to seek out some vital lost data banks and fight for your life while doing so. Here, too, the graphics are impressive with a sense of the James Bond lots-of-activity-going-on-in-a-huge-hangar style, and apparently a whole city to search.

In another style altogether, UBISOFT are creating Skateball – a very slick, fast-moving sports simulation that has big-muscled, enlarged sprites speeding over the ice with a ball, not a puck, to be struck. On the Amiga, it had a very exciting feel and appearance.

The 'incarcerated' programmers were also working on a nice Garrison-type dungeons eat 'em up with fire-breathing dragons as one obstacle to overcome and a horizontal scroller that has the

working title of "Dracula" – a name which might not please CRL too much. Watch out for "Bats" too, which has high quality graphics and gameplay.

UBISOFT are associated with Guillemot, France's largest distribution organisation, so they have a very strong base to build on. And talking of buildings, the programmers, from all over France, initially complained because the first night there they were all so spooked after telling each other ghost stories that they



did not want to take the remote rooms reserved for them up on the third floor. They have got used to the place now. They are reported to work all night and sleep all day so they do not get to see much of the countryside around. They don't seem to care though. What other programmers, with a free ticket home each month wherever they come from, can casually say "Drop in and take a look at the Amiga game I'm working on – out at my Chateau..."? Not too many, even in France...

A.M.

PROGRAMS

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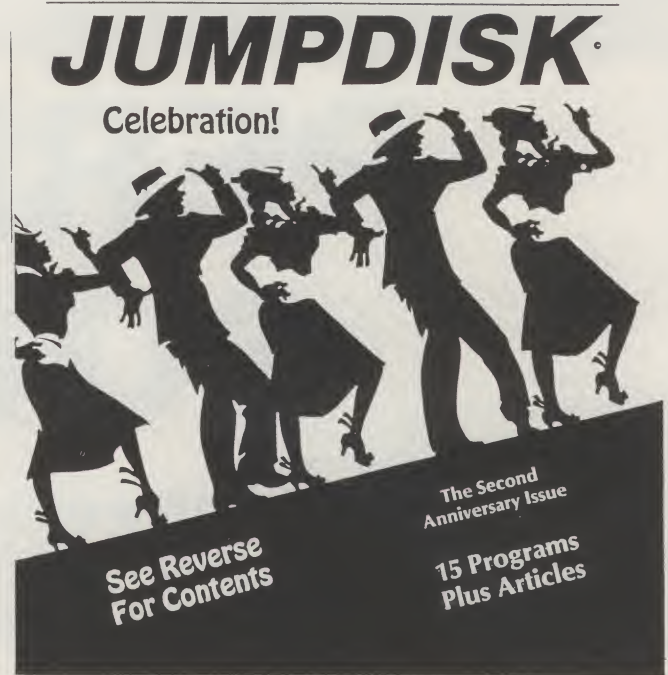
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FAUG#44

MaxiPlan - Comprehensive working demo of commercial spreadsheet program.
XSpell - Spelling checker that proof reads text files.
Insanity - Pre-release demo of game Insanity Fight.

FAUG#50

Rollback - Brings back information that has scrolled off the screen on a CLI session.
Shortcut - Adds menus to the CLI window and builds Macro sets.
DirUtil - V1.0 of marvellous utility that enables CLI operations to be run from menus.
Slideshow - Acrylic on Canvas.

FAUG#52

DirMaster - Very neat little disk manager.
Clickto - A double click on a background window brings it to the front.
PacMan - The infamous game on the Amiga with lots of features.

FAUG#62

Cron -
Addicon - Clones icons for files that don't have one.
Hidell - Cuts out extra memory for programs that run from W/B or CLI.
IFFmir - ILBM display with x and y mirroring.
Lander - Display Hack.
Fformat - For those that cannot stand the slowness of DOS format.
Access - V.26 of this colourful Telecommunications program.
Calc - Nice little programmers integar only calculator. Displays Dec, Binary, Octal and Hex at the same time.
Quickcopy - Verifies if required.
Nag - Electronic Appointment Calendar for the Amiga. Good fun and very effective with the reminders.

FAUG#64

WhereIs - Speeds the process of finding files on disks.
WBDrop - Allows 500 and 2000 owners to use 8 colours in Workbench.
Emacs -
Brick - Breakout (Brickout) style game with stereo sound.

FAUG#66

GWorm - Game that requires control of hungry worm.
SetPri - User Intuition Interface. Adjust task priority.
FPedit - Create different maps for game of Firepower.
DropCloth - Lets you place a pattern or IFF image or both into W/B backdrop.
Access - V.28 of popular multicolour terminal program.
AudioMaster - Working demo of Aegis Sound Digitizer.
TaskX - Real Time Interactive Task Editor.

FAUG#69

Galileo 2.0 Demo - Brings the Universe to your Amiga.
Browser - A programmers Workbench for the Amiga.
Memopad - Excellent W/B utility for reminders, notes, birthdays etc.
TFC - Converts text files (ASCII) from Word-Processors to the proper line terminator.
Mouthed - Determines if a volume or file is on-line.

FAUG#71

Calculator - A scientific/programmer/plotter calculator.
Battleship - Well known board game nicely adapted for the Amiga. Features digitized sound effects.
Movie - Plays back Sculpt-Animate 3D compatible compressed animations.
Features the brilliant demo GhostPool. A must for demo fans.
FF - Useful file search utility run from the CLI.

FAUG#73

Delux - The infamous game of 'Deluxe Hamburger'. The object is to shoot up all the burgers, fries, shakes and hot dogs that insist on attacking your bottle of ketchup.
ARP - 'AmigaDOS Replacement Project', replaces current DOS in a compatible fashion, so that existing programs continue to work.
Backer - Hard disk backup utility.
Access30 - General purpose ANSI Telecommunications program.
MR - A replacement menu for the Workbench screen. Disguised as a mind mangled menu clock it allows you to run 40 of your most precious programs.
QuickFlx - IFF slideshow and cell animation program. Features demo SandBox.

FAUG#75

Formula - A 3-dimensional function grapher. The function will be scaled first and then it will be graphed on its own screen in the colours chosen by the user.
Debug - Tool for programmers.
Video-Film.x - Breathtaking demo that takes place in outer space. Most of us dream of the time commercial games will look like this.

FISH#139

AmiCron - Background task automatically runs certain tasks. Latest version.
ListScanner - Nice little utility to display all the Exec lists.
ProCalc - Simulates an HP-11C programmable calculator.
RemLib - Removes a specified library or displays some information about all available libraries. Inc source in Assembler.
TurboBackup - Fast mass floppy disk duplicator with enforced verify mode to prevent generation of incorrect copies.
WArranger - Sends a window to the front or to the back without selecting it.
WheelChairSim - Simulator developed to allow the matching of a wheelchair joystick to a child's handicap.

FISH#140#141

SBProlog - Vol 1 and 2 of Stony Brook Prolog (SBP) V2.3.2. Vol 1 contains the executables and libraries. Vol 2 contains the C and Prolog source code. A Prolog system for Unix.
In addition to providing a compiler SBP also offers advanced features such as dynamic loading, mixing of compiled and interpreted code, macros, extension tables, a debugging facility offering two levels of tracing, profiling tools, and other utilities.

FISH#142

Diff - Uses the same algorithm as the Unix diff program.
FractGen - Generates fractal pictures from "seeds" that you create. Unlike any of the other "fractal generators" I've seen.
SciSubr - Recommended for those doing Fortran work.

FISH#143

Rim - RIM-5 (Relational Information Manager) is a full relational DBMS that is suitable for VERY large databases using B-tree data storage. Includes a built in HELP database and a programming language. Full Fortran source code and doc included.

FISH#144

Analyticalc - Latest improved version of popular spreadsheet program.

FISH#145

Csh - Latest version of csh like shell.
DMouse - Versatile screen and mouse blander, auto window activator, mouse accelerator, popcli style programmable command key, pop window to front, push window to back etc. Very useful.
DNet - Link protocol that provides an unlimited number of reliable connections between processes on two machines.
Tab - Tablature writing program for the Amiga with instruments for a banjo and string guitar.
TidyProlog - VT-PROLOG is a simple prolog interpreter provided with full source code to encourage experimentation with the PROLOG language and implementations.

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PERFECT SOUND

Sampling the delights of a new sound digitiser, Peter Lee finds that the quality speaks for itself...

You ain't heard nothin' yet', said Al Jolson in the early sound movie *The Jazz Singer*. That was 61 years ago and it marked a turning point in the history of the cinema. The arrival of the Perfect Sound Digitiser may have signalled a similar watershed for Amiga users, allowing the sampling, editing and storage of stereo sound on your own computer.

A digitiser samples the waveform on incoming sounds – it could be music, a gunshot or the roar of a crowd – and translates it into numeric data for storage and manipulation in the computer – a sort of high-class tape recorder. Because of its quality, this same digital recording technique is used in the manufacture of compact disks and in recording studios – it really is state of the art. While it may not be studio quality, Perfect Sound allows you to digitise sounds in stereo or mono, edit them and incorporate them into compatible programs.

The hardware is small – 13cm high, 6cm and under 2cm deep. It plugs directly into the Amiga's parallel port and pokes over the top of the CPU. There are phono-socket connections for left and right sound channel input and two small knobs for adjusting gain on each of the channels. A point to note is that the audio signal can be taken from most output sources (for instance speaker jacks on cassette players) but the best quality results are only obtained by using equipment which provides line-out connections – generally these are better quality audio units, CDs and the audio out from video cassette recorders. In any event, you have to provide your own cabling. It is not possible to hook a microphone directly to the digitiser, so if you want to digitise your voice, you either have to put it on tape and play it back, or use a mike connected to a unit which has line-out, or use a pre-amp for the microphone. In testing these options I found the quality was excellent throughout, though the CD

– as you would expect – gave by far the crispest results.

The gain control on the unit has to be set for each sample and sometimes during the digitising process itself. This is made quite easy by the ability of software to pass the incoming data directly to the

'You simply adjust the control until what you hear is what you want, then you can start recording.'

speaker in the Amiga monitor. You simply adjust the control until what you hear is what you want, then you can start recording. Alternatively you can select a menu item which gives you a numeric read-out of incoming signals and then adjust the gain knobs until the sample peaks at 255 and drops to zero. This numeric display is also vital in adjusting stereo input which should have identical gain settings. A recording can then be started simply by pressing a mouse button. The amount of data you can record is limited by your Amiga's memory.



The Perfect Sound software comes on an unprotected disk and contains a sound editor, information on creating IFF files, the actual source code for an earlier version of the program and several high-quality sampled sounds. Pull-down menus are supplemented by on-screen control icons and there is a graphic waveform display of your sample. Digitising is so simple you tend to lose track of the technical magic that is actually going on! You can digitise the left or right channels independently as well as both for a stereo take, then work on the data by means of the editor, which allows you to treat a sound sample as a word-processor treats text – parts can be deleted, inserted and appended.

The one critical factor in digitising is the speed at which an incoming sound is sampled; Perfect Sound samples the source waveform between 5,000 and 25,000 times a second and it is up to you to decide the rate. Smaller rates mean longer samples – but give poorer reproduction than faster ones. You have to strike a happy medium of quality and memory limitations; a couple of seconds of reasonable stereo sound will eat up 50,000 bytes. At the faster sample rates,

the quality is nothing short of superb; 'is it real or is it digitised' could well be the question! I was happily digitising 20 second bursts of music at modest rates and the only problems I encountered were that the stored data just flooded my disks when I tried to save it; I ran out of storage space before I ran out of digitising ideas and found that lengthy samples – whole songs rather than special effects – were simply too large for an empty disk.

'Digitising itself is foolproof and so simple you tend to lose track of the technical magic that is actually going on!'

When saving data to disk, there are three options: a straightforward IFF, compatible with programs such as Deluxe Video, Instant Music; a straight DUMP which will save the sound data only and COMP, which although saving in IFF format uses a compression technique which cuts file size in half but which I found seriously damaged the quality. The program allows you to load in any IFF standard sound – such as instruments from some of the popular music packages and all the editor's functions can be used on the data. Facilities here are

adequate, allowing slowing down or speeding up of playback, flipping portions of the sample (believe me, Jean Michel Jarre sounds interesting played backwards), cutting and copying and adding portions of other samples.

Once an instrument has been loaded, you can play the different octaves by using the function keys. Obviously you need to be able to re-save any instruments you have amended and there is a very convoluted method of achieving this. It works though, which is the main thing; using this feature enables you to create some outstanding instruments. You could even build up a catalogue of guitar, piano and percussion sounds digitised from favourite records.

'Believe me, Jean Michel Jarre sounds interesting played backwards.'

Permission is given for purchasers to distribute the program's editor executable module, to enable them to pass their digitised sounds to friends.

The manual is brief and to the point; the system is very easy to learn, though I am surprised there is no warning only to fit and remove the digitiser when the

computer is switched off. It may go without saying – but they should say it anyway!

CONCLUSION

A picture may be worth a thousand words – but to actually get your computer to say so in your own voice proves a big kick. Once the initial excitement has worn off – after you have digitised and played back your favourite songs – you will have to justify the purchase in terms of usefulness. There is plenty of scope for entertainment – adding effects to video presentations and creating instruments for music packages. Perfect Sound is easy to use and it creates samples of exceptional quality. The only two faults I experienced were the lack of any help on running sounds from your own Basic programs, or from the CLI to by-pass the editor – annoying absences for home enthusiasts. But in terms of cost and quality, Perfect Sound is highly recommended.

P.L.

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THE ELEVENTH OFFICIAL COMMODORE COMPUTER SHOW

The show all Commodore users were waiting for? Was the wait worth it? Al Meric was there looking for the new and exciting – he reports . . .

The sun has the amazing ability to lure computer users out from their dark, mysteriously haunts. Each year millions of ashen faced people join the rest of society to frolic in the sun (in England? Ed.) and recharge their internal batteries. It comes as no surprise then that many of the computer industry's suppliers find this a lean time. It is fairly common for software and hardware manufacturers to hold back BIG products during the peak summer months when buying is at its lowest. Instead, more of the run-of-the-mill goodies are released and everything goes for bargain prices just to keep things ticking over until the autumn build up for Christmas. This year's Summer Commodore show did not give any indication that the usual Summer lull was going to be shattered.

The first day at the show started off with the almost obligatory press conference. Commodore UK's Managing Director, Steve Franklin kicked it off with the usual greeting and introductions before passing the proceedings over to Kristian Anderson, Commodore's North European director. Kristian Andersen reaffirmed Commodore's commitment to the UK market and told the assembled press that Commodore had decided to begin a massive multi-million pound marketing investment in the UK this year. He also spoke of Commodore's intention to commence their biggest ever advertising campaign sometime in July. Of this, he said, a major portion would be dedicated to capturing the lion's share of the leisure market. We were also told to expect some new 68020 product later in the year and that an AT bridgeboard was close on the horizon. That was pretty much it, so with the press conference over it was time to get down to the real business – trying to see every stand at the show in a logical and orderly fashion without visiting any stand more than seven times.

After only a few minutes of fighting through the crowds it became apparent that this was the show for the bargain hunter. Prices were being pruned everywhere. Even Commodore got in on the

act by officially reducing the U.K. price of the Amiga A500 by £100.00 to match the price of the Atari ST at £399.00. However, towards the end of the first day Amiga 500s could be picked up for as little as £339.00 while 3.5" external drives were almost being given away at £75.00. One exhibitor was offering 6 Amiga games for only £10.00. Several stands had Amiga programs for under £5.00. Even the recently announced Excellence! Word-processing package was available with a £50.00 discount. Unfortunately, pricing cutting was rife. As one stand reduced a price, another stand would lower his even further and so on throughout the duration of the show.

In one instance two adjacent stands reduce the price of similar products several times in the space of only one hour. It eventually got to the point where many exhibitors were selling goods at only marginally above cost; 'Unfortunately' because of the adverse effect it has on the industry as a whole. Dealers start working with ridiculously low profit margins, which in turn means they have to move more stock. This reduces the amount of time they can afford to spend giving users help and advice. It is not surprising, then, how many companies disappear as quickly as they came.

'Over 700,000 Amigas have been sold to date'

So what was new? On the first day of the show on our own **AUI** stand we had the only publicly available copy of **INTERCEPTOR**. This fast flying, combat simulation/arcade game had people drooling and pleading to buy a copy. It was not until the following day that copies were on sale. **AUI** was also able to demonstrate Discovery's Zoom and two as yet unannounced games from Germany, of which more details will appear in Amiga User International in the near future. Microtext demonstrated their new Amiga Teletext adaptor and were besieged by businessmen keen to find out if this powerful programmable data receiver would fulfill their needs. AmigaLand on

their two impressive stands were showing off the VD3 colour frame grabber, an A3 graphic tablet, the Bernoulli removable cartridge 20 Meg drive and a combined 5.25" and 3.5" disk drive unit. Dr T's KCS V1.6 MIDI sequencer filled the air with pulsating multi-track sounds. Ariadne Software and SciCom were both vying for a slice of the interactive video market with their latest hardware, software combinations. Commodore, hidden from view within their space age pyramid style stand, took their chance to air the new PC1 and expansion unit. At its new price of £369.95 it became a viable alternative to the Sidecar and A2000 Bridgeboard.

At the lower priced end of the market several interesting 'gadgets' had made an appearance: A selection of A500 stands, designed to support monitors, units that plug into both joystick ports and via a switch enable any combination of mouse and joystick to be selected, low cost sound samplers, 3.5" disk cleaners, anti-static mouse pads, mouse covers and many more. Rumours of the imminent release of a Freeze frame type device were also abundant.

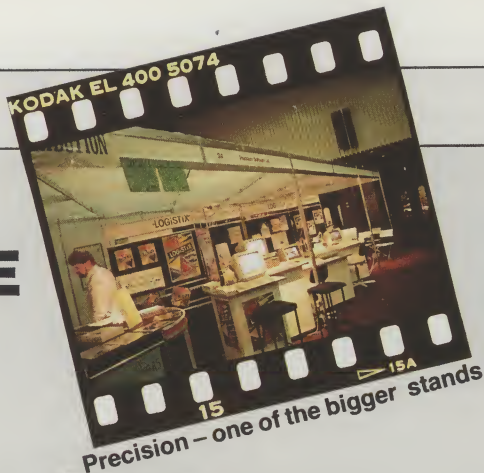
During the course of the show the Independent Commodore Products Users Group (ICPUG) held several question and answer sessions. These were open to all and proved to be very popular. Amongst the ICPUG panelists was Commodore Guru Jim Butterfield who held the audience captive with his wry humour and impressive knowledge of Commodore Computers.

Friday Evening saw the first UK developers meeting, where over 100 developers got together to discuss ways of improving communications between themselves and Commodore. Dr Rahman Haleem, CBM's Technical Support Manager, spoke of Commodore's commitment to achieving this objective by providing a worldwide technical support network for developers everywhere. This, he said, would eventually include an online database facility. Rick Glover, Rahman's European counterpart was questioned about the number of Amigas thought to have been sold around the world. To this he said that based on figures he had recently seen, over 700,000 Amigas have been sold to date and that the Amiga A500 was no longer seen as a 'might-make-it-one-day' machine but that it had indeed made it.

For the public it was a show full of good buys. For the traders it was a weekend of box moving and high spirited competitions. For us it was a fairly uneventful show but one that left the feeling that the Amiga had eventually reached maturity and that the computer industry had at last regained its balance.

A.M.

THE (CANDID CAMERA!) COMMODORE COMPUTER SHOW



Precision – one of the bigger stands



A delighted bargain hunter



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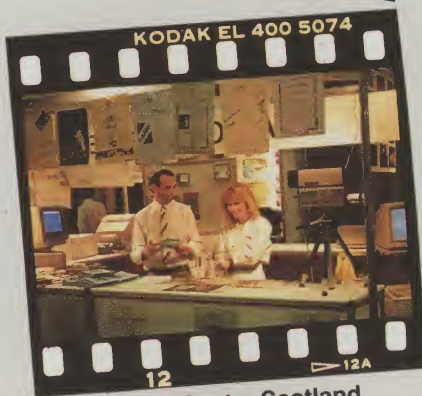
Burocare's Polaroid Palette



HB Marketing's stand



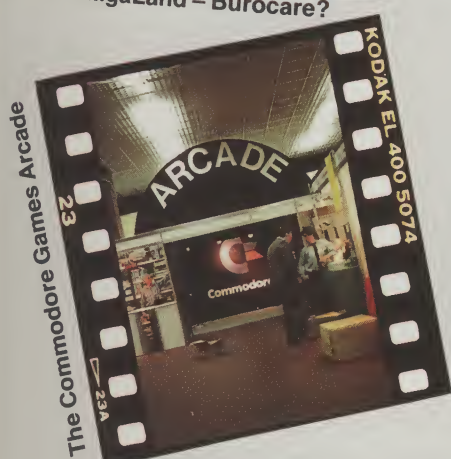
AmigaLand – Burocare?



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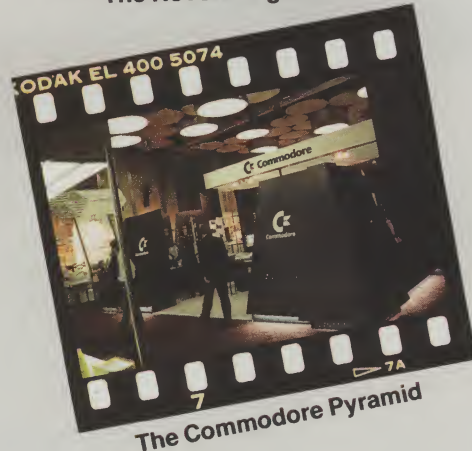
The Novotel's ground floor



The Commodore Games Arcade



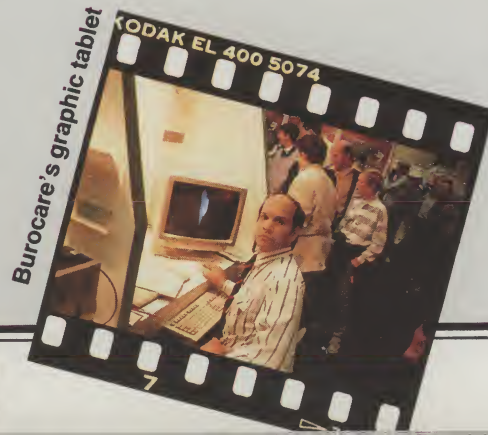
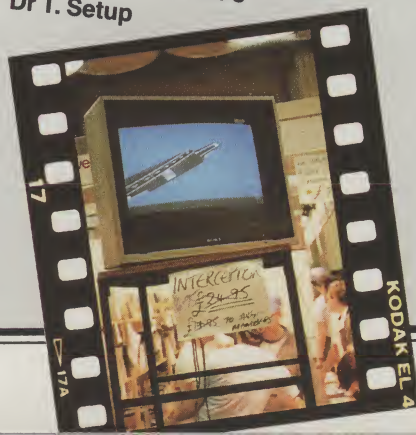
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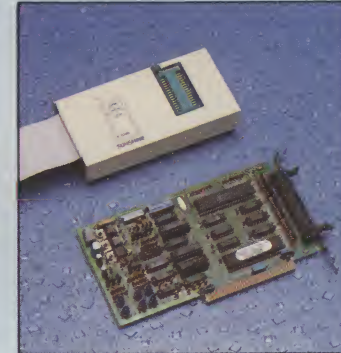


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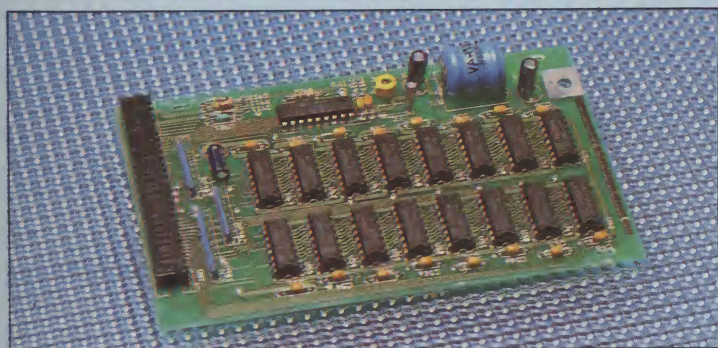
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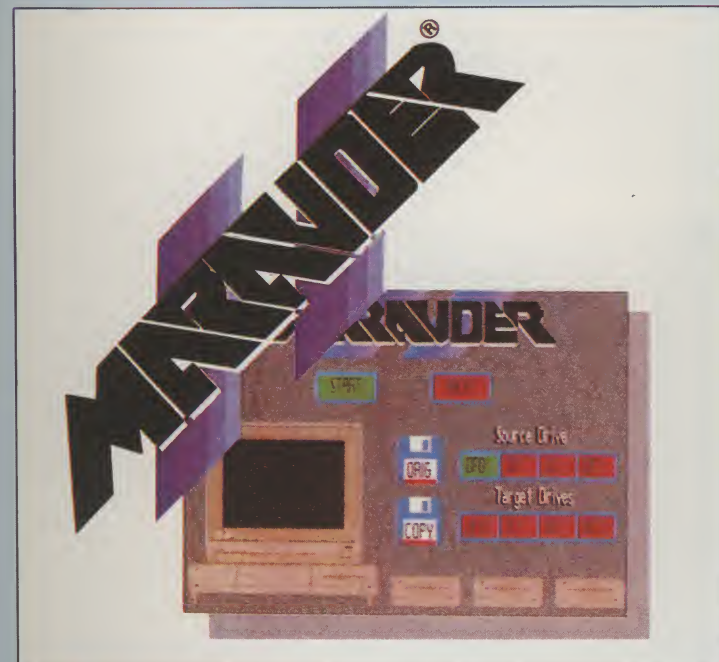


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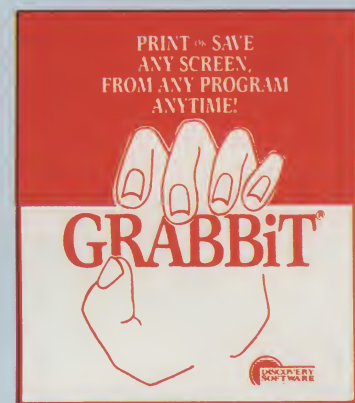
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EXCEL

How far can a program called Excellence! live up to its name? Peter Lee sizes up this new word-processor from the creators of Scribble!

Micro-Systems Software have one of the first and perhaps best-loved word-processors for the Amiga-Scribble!. OK, it has its faults but it never lets you down and does a decent job of getting text from the screen on to paper. So, any new word-processor from this company has a lot to live up to. The publicity alone for the new program might lead some people to think a new era was dawning for writers. It is not. Excellence! certainly has a lot to recommend it and contains features well ahead of the competition – but the competition may not be considered all that hot in this field at present. Nevertheless, if you are expecting a new, improved version of Scribble! I may as well shatter your illusions straight away. It bears no resemblance at all, but then, of course, nobody promised it would, for Excellence! is an entirely

the like before in a number of similar word-processors – Pro-Write being possibly the closest example – with remarkable similarities between the two programs. However, to be fair to Excellence!, my expectations should not be a measure of its value and it contains a varied selection of features worthy of anyone's consideration, especially people interested in semi-DTP work. Indeed, it has some attributes which are really outstanding; such as the thesaurus, grammar checker, style information and glossary creator – more of which later.

Excellence! comes on two disks; the first is only a Workbench disk and the program itself takes up other unprotected disk. A fat, ring-bound manual in the boxed 'serious user' style completes the package. The program will run on a standard 512K machine but will only

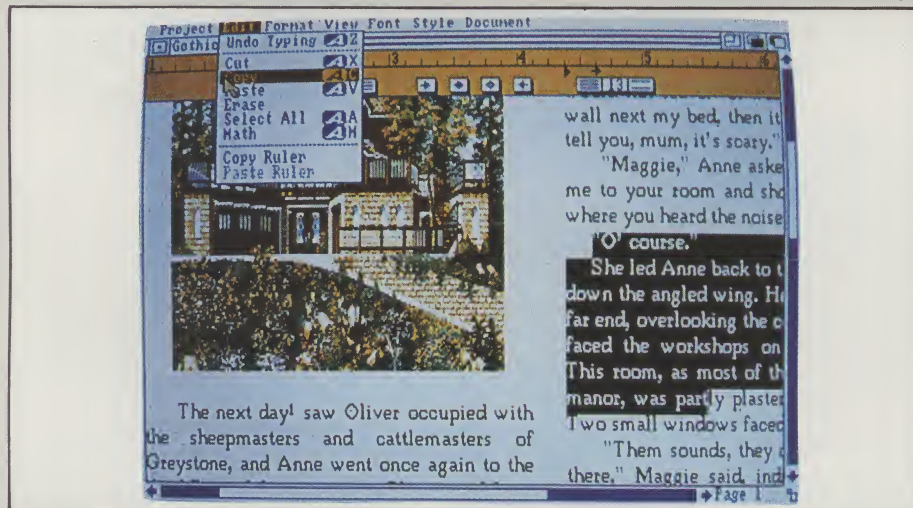
selecting one of the four line format icons (flush left, right, justified and centered) and by moving small markers along the ruler, margins, tabs and indents can be locked in.

Being a graphic word-processor, Excellence! allows a selection of fonts to be used throughout your document. At least Micro-Systems have gone to the trouble of adding some useable typefaces to the standard and by now tired, old Amiga repertoire. Lack of memory can hinder the number you use in a document as each font is retained once loaded. Memory is also at a premium when multiple documents are open simultaneously. The program is clever enough to remember which font was used in any word, so if you have to make changes, the correct face and styles are automatically generated as you type.

Probably the main benefit of using this graphic-type of word-processor over conventional ones such as Word Perfect or Scribble! – apart from the multiple font option – is the ability to load in images. This makes Excellence! more of a desk top publishing aid than a rival to the serious text-only programs. However, only eight colours are supported so this tends to nullify some of the benefits of graphics for all but the simplest drawings. Company logos, letterheads and handbills are fine – digitised pictures are sophisticated artwork are out, though the program does make a stab at converting images into just eight colours, sometimes with rather pathetic, mangled results! Wondering how your art masterpiece is going to turn out is a bit like Dr. Frankenstein waiting for the monster to wake up...

Text can be input using any of the colours on any of the eight background colours and a wide range of printers are supported, with the ability to control print density for better results than the normal Preferences selection allows. PostScript is supported and there are some compatible fonts on the disk.

As a word-processor, Excellence! contains the usual batch of standard features – apart from overtype mode. This presents no difficulties as a similar option is implemented, called Replace. This allows you to highlight a word with the mouse cursor and begin typing. The unwanted word disappears and your new text is entered. In keeping with its DTP



different product, aimed at a different market. Excellence! is a graphic word-processor, using fonts loaded from disk and images imported from paint programs. Printouts take the form of graphic dumps and while all this leads to true WYSIWYG output (apart from the irritating fact that the screen display is double the height of the printout), it leads to a serious case of oé'ja vu... We have seen

reach its full potential with 1 Meg of memory – graphic displays require a large storage overhead.

You enter the word-processor either by clicking on its icon, or clicking on an already saved document. After a lengthy load-time it presents you with a pretty standard text-input screen containing several control icons and ruler information. Page lay-out can be controlled by

LENCE!

leanings Excellence! supports multiple newspaper-style columns and a well-used tool of the publishing trade, a hyphenation system. When invoked this will try and split words which are too long for the line. This is all very well until you start finding bad breaks – things such as Beeth-oven or dil-emma. Luckily an exception dictionary is supported where you can specify the points in a word where a hyphen is allowed.

One useful feature which did impress me was the ability to define a glossary – a sort of chipboard for marked text and graphics. In this way your letterhead can be saved and re-used as needed. In fact you can define a key press combination to insert a specific item from the glossary – a kind of macro call. As well as simply loading in an item, these macro calls can excute a small series of commands in a mini-programing language. In this way you can simplify any menu selection and atuomate input. For instance the macro (menu font, garnet, 9 point) once stored under a key will change to the specified font when pressed.

'Excellence! supports multiple newspaper-style columns and a well-used tool of the publishing trade, a hyphenation system'

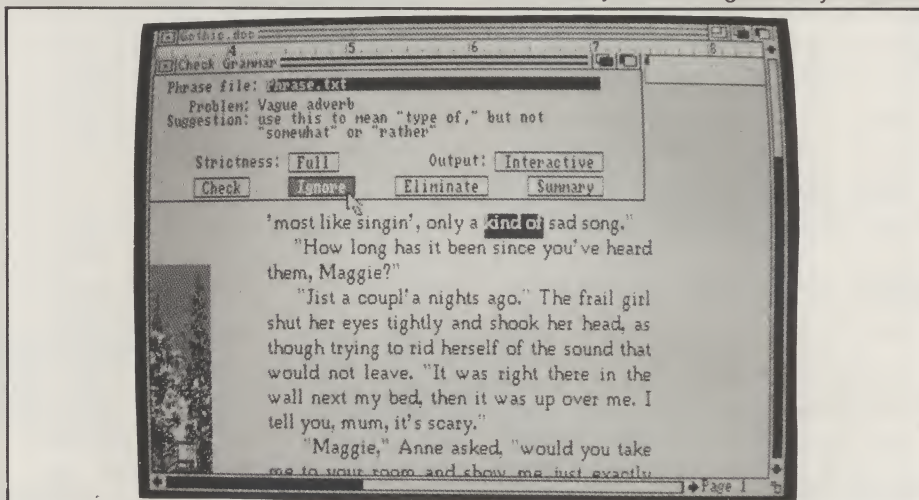
Because only a portion of a page is displayed at any one time, you can provide the entire page as a scaled-down version to give a taste of the finished product before printing. Text is illegible but you do get the feel of the overall design.

Images loaded into a document can be re-sized, sometimes with unpredictable results – which means you may have to load them in all over again because this size feature cannot be un-done. It is also sad to see that there is no ability for text-flow around a loaded graphic. While you cantype at the baseline of the image, it is not possible to input text alongside. This seriously curtails the program's potential, preventing as it does pictures being surrounded by text. This oversight is the single worst feature, stifling an area of creativity and negating the claim made by Micro-Systems that Excellence! is

'perfect'. However, it must be said, it is a fault very common to many of its competitors too. And anyway, one man's – or company's – perfection is another man's... Among the more worthwhile features is a spell-checker which, for those who have room to spare, can be loaded into memory from start-up. This makes using the continuous check very fast – start typing your document and any unrecognised words are indicated. A

synonyms. This is a big help to busy writers and is a worthwhile addition to any word-processing program.

Among other features are those all word-processors with aspirations to professional use require – headers, footers and footnotes. These, together with the ability to generate a table of contents or an index provide very valuable additional tools. Excellence! also supports a rudimentary mail merge facility. In this



supplementary user dictionary can be created to suit your needs but unlike Scribble! which requires a merge program to add new words to the existing dictionary, Excellence! stores them in text editable form so additions and amendments are made more easily.

Style is a very personal thing but there are some when help is needed. Excellence! boasts a style checker of sorts, though I would not give tuppence (hackneyed, outdated cliched phrase) for it! Who do Micro-Systems think they are to tell a writer that by using the word 'indicating' they are 'overstating or being pretentious' – indicating a restrictive view of things based on the lowest common denominator. This feature, apart from being annoying and probably of more use to people who speak in terms of 'ongoing situations peaking at a ceiling of 500%', seems arbitrary and is not user-definable. As if this ticking-off were not enough, a graph is then displayed which measures your performance – or lack of it. Of more use is the in-built thesaurus, which when asked will supply variations on the word hilighted – antonyms and

way you can send the same letter to lots of different people whose names and addresses are kept in a separate file.

CONCLUSION

Excellence! has a lot going for it – the idea it incorporates are wide-ranging and useful. I was, however, left wondering if Micro-Systems had not somehow slightly missed their target. They opt for a graphic word processor but pack in all the ordinary text manipulation a Scribble! user would give his or her right arm for (even if it meant typing one handed!) I think it may not quite work as a whole. Probably Micro-Systems have tried too hard to be all things to all users and the frills just get in the way of what a word-procesor is supposed to do: allow you to get your ideas down on to paper. Excellence! actually succeeds more as a desk top publishing program than a WP and even then there is the gripe about graphics preventing flow-around text. Micro-Systems have not been shy in naming their product – so I shall be equally forthright and simply say that Excellence! isn't.

P.L.

Price: £199.95

DISK-2-DISK

As more 64 and 128 owners migrate to the Amiga, the need to be able to transfer data between the differing formats is growing. Alastair Statham, equipped with just about every computer ever made by Commodore, investigates a possible solution.

I wonder how many Amiga users once used a Commodore sixty-four. Given the tremendous loyalty people seem to show towards Commodore I bet there are quite a few, including some who were even PET owners. Commodore possibly enjoyed substantial loyalty even though each new breed of machine had a major area of incompatibility with its predecessor. The VIC and Sixty-Four did not support the IEEE-488 peripherals required by the old PET, so everyone had to either buy an expensive adapter or get new disk drives and printers. Then along came the Amiga with, you've guessed it, no interface for either type of peripheral. It may well make sound marketing sense but it does nothing to help me get all my PET, VIC and 64 data onto my Amiga. Thankfully CCS (Central Coast Software) are offering an easy solution called DISK-2-DISK.

Disk-2-disk transfer C64/C128 format files to and from AmigaDos. It supports both 1541/4040 and 1570/1571 disk formats and can even cope with 1541 floppies. 8050/8250 formats are, not surprisingly, unsupported. The new 1581 3.5-inch C64 format is also missing from the repertoire. Sequential, relative and

'Sequential, relative and user format files may be copied in either direction'

user format files may be copied in either direction although REL files are treated as if they were SEQ or USR and all side-sector information is ignored. All that is needed to run Disk-2-disk is an Amiga with at least 256k of RAM, Amiga-Dos 1.1 or 1.2 and an external 5.25-inch disk drive configured as either 'DF1:', 'DF2:', or 'DF3:'. Although it can copy

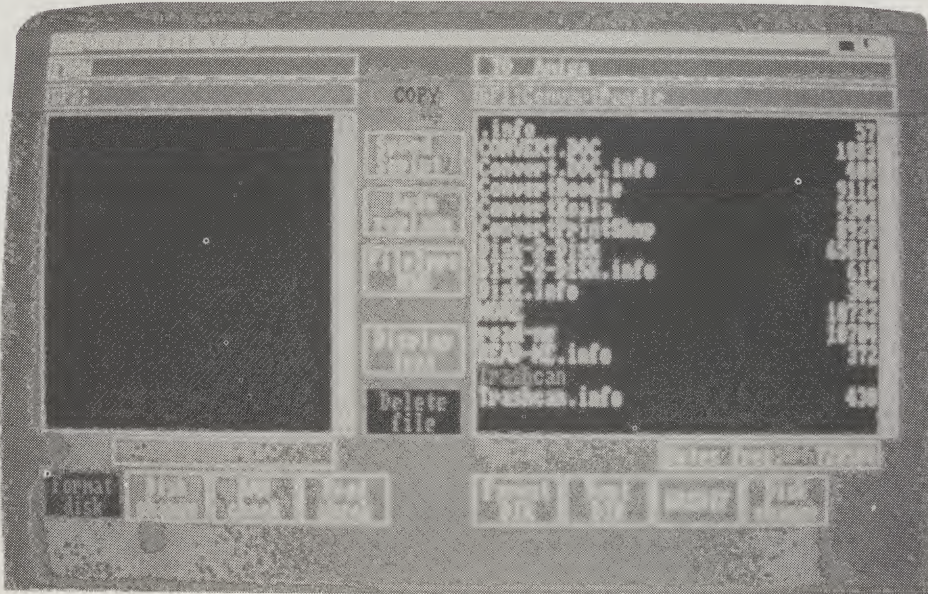
both binary and text files Disk-2-disk does not make program files executable on the Amiga. If a BASIC program is transferred as a LISTED SEQuential file instead of a PRG file it can be tailored to run on the Amiga. A function of Disk-2-disk called BASDIF will alter the BASIC statements which need to be altered and make them into remarks by prefixing the line with REM***. Conversions between PET ASCII and standard AMIGA ASCII is also a built-in function, as is the deletion and display of files, wild-card filenames and disk checking.

Disk-2-Disk is supplied on a single unprotected disk and can be run from both intuition and the CLI. It comes with a small but complete handbook supplemented by a READ.ME file on the disk containing the latest hints, tips and amendments.

Having brought up Workbench and placed the D2D disk in a 3.5-inch drive you can either click on the disk icon and

then the D2D logo icon to begin execution or enter 'DFn:Disk-2-Disk' from the CLI. In both cases you are greeted with a welcome screen which explains why it is morally abhorrent to rip off Amiga software. A PROCEED gadget gives entry to the screen from which all the functions are driven without any need to use drop-down menus. D2D will only run properly in eighty column mode so anyone defaulting to sixty column mode in their preferences will have to change to 'TEXT 80' before using D2D. When it starts up D2D displays the directory contents of the default C64/128 drive and the current AmigaDos directory. The default C64 drive is DF2: but clicking on the drive gadget will easily alter its address to another external drive.

To process a file it must first be selected by clicking on the name of the file you wish to work on. The familiar scroll-bar technique is used to move about the alphabetically sorted directory listings. The default Amiga directory is the current directory at the time of execution but this is easily altered using either the PARENT DIR/ROOT DIR gadgets or typing the new subdirectory path description into the Amiga filename box. Device numbers, including RAM:, are also set from this box. The selected file is highlighted and the name placed in the filename box. The copy direction indicator is set according to which drive the file was selected from. As C64 filenames cannot contain certain characters or be more than sixteen characters long the name is automatically truncated and all illegal characters removed. If you want to change the destination filename you can edit it as you wish. The selection of files



to copy can include wild-card pattern matching according to the standard Amiga rules.

Once a file has been selected it may be copied. The copy gadget indicates the copy direction which is easily altered by clicking to TO and FROM gadgets. Copying is initiated by clicking the COPY gadget. If the file already exists you are asked whether or not you want to replace it. This prompting may be disabled by toggling the ASK TO REPLACE/AUTO REPLACE gadget. Files copied from the Amiga need to be given a filetype through the options each time it is selected. An ASCII box provides a similar function to control the nature of the ASCII, Upper/lowercase 1, Upper/lowercase 2 and Uppercase/Graphics. Specific conversions are available for Paperclip, Speedscript and Pocketwriter word processor document files. Disk-2-disk cannot detect conversion errors so it is up to the user to get the setting right. It is fairly easy to tell if the setting is correct because there is a DISPLAY TEXT gadget which allows you to display the translated text in a window before attempting to copy the file. Basic files which have been listed to a sequential disk file can be copied from the C64 disk to the Amiga using the UC/Ic ASCII conversion option.

The DELETE box will scratch the selected file from either the AmigaDos or

C64 disk. Delete does not support wild-card file definitions. As C64 disk changes are not automatically detected it is necessary to click the DISK CHANGE box to make D2D recognise the insertion of a new disk in the 5.25-inch drive. One

'Specific conversions are available for Paperclip, Speedscript and Pocketwriter'

problem experienced by this utility is the difficulty in processing tracks one to seventeen on a C64 disk. Reading this area is slow and often unreliable but writing to it is virtually impossible. For this reason the FORMAT option creates C64 disks with the first seventeen tracks unformatted and marked as used in the Block Allocation Map. D2D provides two disk checking functions for 1541/1571 format disks. Clicking on the BAM CHECK box begins a process of scanning the directory of a C64 disk and comparing it against its BAM. A requestor reports any discrepancies. Selecting the READ CHECK box causes each sector on the disk to be read in turn. Errors, often caused by head alignment problems, are again reported by requestor. Disks formatted using D2D will usually fail this test on their first seventeen tracks.

The Disk-2-Disk disk also includes three public domain programs which can be used to convert several types of Commodore 64 picture files to IFF format. CCS did not write these programs and therefore do not support them. They are provided 'as is', as a convenience to the user but with the proviso that CCS do not guarantee that they will do anything useful for you!

Disk-2-Disk, although by no means a panacea, could be a real benefit to anybody trying to move data from their old Commodore system. It is achieving something which has long been thought virtually impossible. While by no means infallible, it can achieve a respectable success rate as long as good quality disks are used and data is forced to reside away from those first few difficult tracks. The facility to migrate BASIC programs is potentially very useful. As far as it goes BASDIF is a great idea. Unfortunately it cannot translate between the two basic dialects or do full syntax checking. Perhaps I expect too much, but Central Software deserve a great deal of credit for getting it to work at all.

A.S.

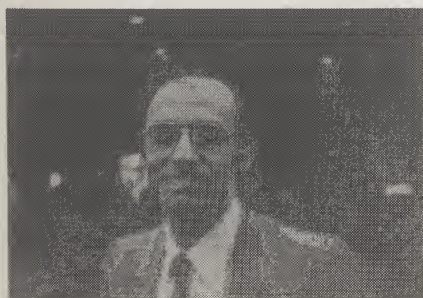
Price: £29.95.

Contact: Burocare Computer Systems, 211 Kenton Road, Kenton, Harrow, Middlesex, HA3 0HD. 01 907 3636.

CATS-UK

At a press conference at the recent Commodore Computer Show, it was announced that Commodore were going to target the UK for its next big sales drive. Also mentioned were LARGE sums of money that are to be invested in the UK.

One area for which some of this money has been earmarked is that of technical support for both the developer and end user. Dr Rahman Haleem, Technical Support Manager for Commodore UK, explains what is being done to achieve those goals.



In an effort to improve the quality of software for the Amiga, Commodore UK are setting up a developers' support program to help existing developers and encourage new ones. The program provides, amongst other things, regular updates from Commodore, technical

help through its large network of expert advisers worldwide and assistance with development equipment. A library of developments is being set up to help developers identify new areas and prevent duplication of efforts. This library opens up a window onto Europe and the USA through Commodore's internal network. Thus UK developers who contribute to it benefit through worldwide exposure of their products. Confidentiality, when applicable, is assured however and projects are only exposed at the developer's request.

Commodore Amiga Technical Support - UK (CATS-UK) will be organising meetings and seminars on a regular basis. An Amiga Developers Advisory Board (ADAB) has been set up to represent the interests of all Amiga developers and will

meet regularly with Commodore.

Improved communications between developers for exchange of ideas, problem solving etc, has been given high priority. A decision is to be reached soon on recommending a computer network that suits the majority of developers.

So, if you are an Amiga developer and have not already registered with CATS-UK, or if you are considering developing for the Amiga, Commodore would like to hear from you. Write with details of your work or intentions to:

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Commodore Business Machines (UK)
The Switchback
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Berkshire SL6 7XA.**

GOLDSPELL II

John Walker checks out the latest stand-alone *speling* spelling checker from Gold Disk.

Who needs a stand-alone spell-checker? Users of the three most popular Amiga word-processors – WordPerfect, Scribble! and ProWrite 2.0 – will no doubt shake their heads. They have already got built-in dictionaries. Why should they want another? Gold Disk, the wizards of desktop publishing, are nevertheless hoping to put a spell on them and most of the other Amigans who process words.

GoldSpell II is a spell-checker that can be used with everything from Notepad to ProWrite, TextCraft, TextCraft Plus, Scribble!, WordPerfect and ASCII files. It is also compatible with Gold Disk's two desktop publishing programs, PageSetter and Professional Page. However, it cannot cope with WordPerfect files that contain headers and footers. When GoldSpell II finds them, it comes to a complete halt so that you have to reboot the computer.

GoldSpell II is up against tough opposition. It does offer some functions not found in other spell-checkers. However, in other respects it fails to measure up to the built-in facilities found in the big three of ProWrite, Scribble! and WordPerfect. Its biggest drawback is its speed. It is far slower than its rivals. I tested it and the others on a 4,000 word file that contained a spelling mistake in the last word.

Scribble!'s spell-checker took 55 seconds to check the document – a time which was cut to 29 seconds when its dictionary was first loaded into RAM. WordPerfect's checker took 22 seconds and only 18 seconds with its dictionary in RAM.

ProWrite 2.0 was even faster, taking 14 seconds using its main dictionary and 10 seconds using its smaller dictionary. When the main dictionary was loaded into RAM, it took 10 seconds to check the 4,000 words.

GoldSpell's dictionary runs from RAM and it cannot check a document held in memory, as the others can. You must first save your words, either to a disk or to the RAM disk, or use the program to check an existing file on disk.

GoldSpell took nearly twice as long as the slowest built-in spell-checker to read the document. Its time of 104 seconds was reduced to 53 seconds when the document was first loaded into the RAM

disk but that is still less efficient than the others.

GoldSpell's dictionary contains 90,000 words, which is bigger than Scribble!'s, smaller than WordPerfect's and the same size as ProWrite's.

GoldSpell comes on a unprotected disk together with an informative 44-page manual. It will run on any 512K Amiga using Kickstart and Workbench 1.2 or higher.

One plus point is its batch mode, in which it will check a document without stopping, providing at the end a list of words are either misspelled or not found in its dictionary. This means that you can be working on one document while it spell-checks another. The list of unrecognised words can be saved to disk for checking at a later time. An inconvenience with the batch method is that the words are not shown in context but merely presented for correction one after the other.

When using GoldSpell in the normal way, the misspellings are shown within the actual document. About eight lines are displayed, enough to see each word in its proper context.

The program offers the usual alternatives for words not found in its dictionary. You can click on one of four alternatives when checking a word:

Accept ignores the word.

Accept and Remember will ignore further occurrences of it.

Guess Spelling will give possible alternatives to the word.

Scan Dictionary will offer a page of words that are close to it in alphabetical order.

If the word appears on either list, then clicking on it will substitute it in the document. Once you have finished checking a file you can save it to disk under its original name. The uncorrected version will be renamed with the suffix ".bak" at the same time. These, though, are standard spell-checking functions. What may make GoldSpell worth buying is its more original features.

You can create different user dictionaries of your own words. Even better, you can load not just one of these into memory as a supplement to the main dictionary but as many as your Amiga's memory will hold. This can be very useful when writing specialist reports.

GoldSpell's main dictionary is North American – that is, it accepts 'color' as a correct spelling but not 'colour', although it does recognise 'coloured'. You can overcome this problem by using its Exceptions list, in which you create a file listing the words you do not want it to recognise and its Substitute list, which will substitute one word for another.

You can also use the Substitute list to have GoldSpell automatically correct the spelling of words that you always get wrong. It provides a readability scale for your document, using the Gunning Fog Index which gives a value based on grade levels. (The FOG index of this review is 11.)

It can also analyse a document for the frequency of word usage, with an option for ignoring common words such as 'a' or 'the'. From this you can discover whether you are using some words too much. You can also use it as the basis for creating an index to a document.

Those users who already have a built-in spell-checker with their word processor will need to decide whether GoldSpell's extra facilities are worth the extra cost. Do you need batch checking, multiple user dictionaries and word frequency counts? These are the questions to ask.

GoldSpell II would be of greater benefit if it could check the spelling of words as they were typed – something no Amiga spell-checker can do, although it is a common enough feature on checkers used with other computers.

It would be helpful if it incorporated a thesaurus, which is a useful feature so far found only in WordPerfect. It also lacks WordPerfect's ability to spot the typing of double words, such as 'the the', which is something I constantly do.

For users of the word processor that is part of Gold Disk's PageSetter, or of its Professional Page desktop publishing program, GoldSpell is of immediate benefit since neither has a spell-checker.

Although words can be checked before loading them into either DTP program, changes are often made on the page so that a final check of the files with GoldSpell is an excellent safeguard against mistakes.

If you are using a word processor that lacks a dictionary, then GoldSpell II is a worthwhile investment. It is powerful and easy to use, if a little on the slow side.

J.W.

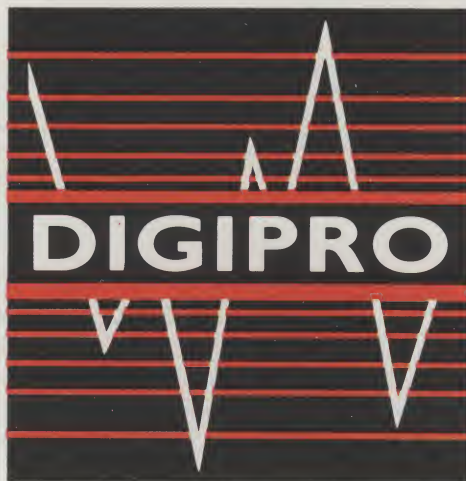
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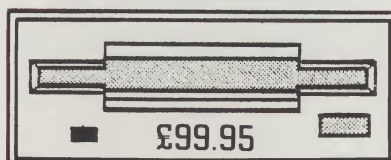
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Heard it On the Grapevine . . .

Hearing whispers, Zack Skinner leads an intrepid AUI team on a quest for the 'Mega Game of 1988'. What they discover may not be just a load of Kristal balls.

For some time whispers have been going around that something special was being developed for the Amiga. A game that would jump the machine into the next stage of its career. No, it was not *Interceptor*. Everyone knew about that long ago. In Grapevine terms, *Interceptor* is old hat. This new one would, the rumours went, be the Mega Game of 1988. It was going to have the impact that *Defender of the Crown* made when it first hit the Amiga scene back in November 1986.

When the whispers crystallised, it was around a strange software company supposedly called Fish and Chips! Our credulity was certainly being stretched. With the aid of a few metaphorical bloodhounds, AUI set out to track down this mysterious fast food style "mega game" company. Was the whole thing going to turn out to be vapourware . . . a product of the vivid imagination of the computer business like a nightmare after a heavy late (fast food) dinner?

We found the answer in one of the less glamorous suburbs in North London, Muswell Hill, above a dry cleaners, at the top of some dark stairs . . . It was like the beginning of some computer adventure. "You have a quest . . . you climb the steps . . ."

We were admitted to a room crowded with computers and ancillary electronic equipment, mostly of the Amiga/ST variety. "Fish and Chips?" we asked hesitatingly. The admission was given almost grudgingly. It turns out that we got the pronunciation almost right but the spelling wrong. Fissionchip, which some might think a wittier and certainly more relevant title, is the correct name for the company that is creating the rumoured



musical, sorry, computer entertainment. The reason that the word 'musical' crept in was that Fissionchip's original concept for the "Mega Game" was not for the computer at all but for a stage musical. Their plans had advanced enough for them to get Patrick Moore, the well-known TV astronomer, and singing star Elaine Page involved. Both recorded voice and music parts. (No, Patrick Moore didn't sing.) And the first thing Fissionchip did was play AUI the actual digitised Patrick Moore voice that is to be introducing "The Kristal".

The Kristal? Yes that was the name of the show, once to be a musical, now gathering a cast of thousands, it seems, to help get it onto your Amiga screens.

At this point, it should be said that as at other magazines, AUI is often subjected to hype; the heightened, fever pitch of excitement that software houses or their PR people bring to bear to attract attention to their products which they believe, like fond mothers of unexceptional children, are not only beautiful and intelligent but possess an irresistible charm that will benefit the whole human race – and possibly even the aliens on distant planets . . . Too often, like those fond mothers, the software hypers are sadly mistaken. It turns out to be just another horizontal shoot 'em up . . .

So in our sceptical, journalistic way, we

were on our guard. Interestingly, the eccentric Muswell Hill surroundings soon became less intriguing than what we saw on the monitors' screens. This was not another over-fond maternal illusion. It was clear we were being shown something that might possibly justify the rumours . . .

After the Moore sound we heard some music, composed by a certain Giulio Zicchi, whose name has appeared not a million miles from these very pages. It was strong, vibrant and memorable. The Fissionchip team claim they hum it all day . . . it wasn't Mozart but it was undeniably very good.

Then the graphics. Fissionchip say they are aiming to surpass Cinemaware –

KRISTAL

an ambitious objective. Once again they may not be vaulting too high. Without question, they have produced some of the most impressive looking backgrounds, action areas and character sprites that have yet been created for home screens. Even those they showed us on the ST were of high standard. When they brought the Amiga scenes out, we were even more sure that we were being shown something out of the ordinary. The graphics were not only colourful, highly detailed and excellently drawn, but the characters – we were told that there are to be at least 60 different ones all cunningly animated – looked hauntingly realistic. The animated movement was of the highest quality – all swirling cloaks, swinging arms and bouncing strides.

We saw, too, some spritely sword fighting – and that word spritely is meant to be taken in both senses. The slashes were swift and silky smooth and the fighter was well-defined and of a standard that will, at least, compare with any yet seen on an Amiga screen, imaginatively dressed and illustrated. If the sword play was good, how was the gameplay? Well, we can't tell you about that because we did not see any – for technical reasons . . .

"What kind of game is this anyway?" we asked.

"It's everything," we were told.

"Yes, we know that. Everyone tells us that about their games. But what is it really?"

It seems that *The Kristal* is planned to be a massive roleplaying, strategic, arcade adventure, unlike anything ever done before – a new concept in computer games . . . Oh yeah?



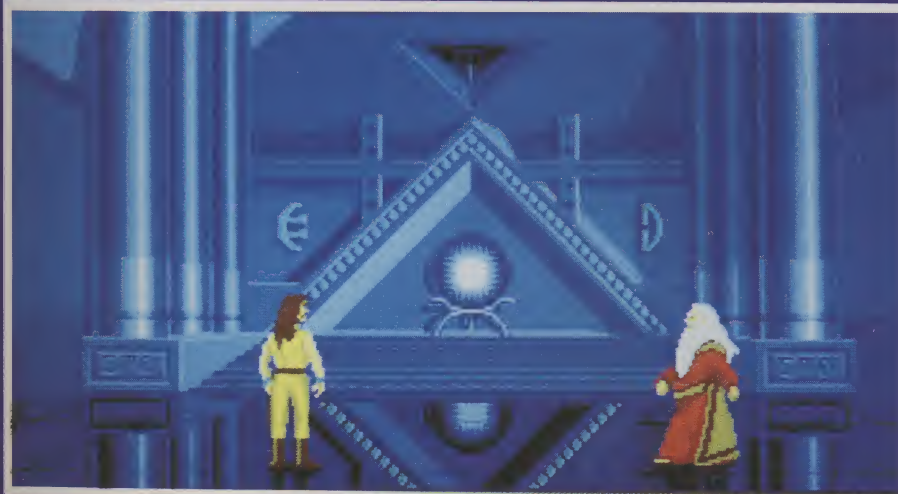
Well, there will be a quest . . . to discover the truth behind the disappearance of the enchanting *Kristal*. You will travel mysterious planets, meet witty characters, gain information and clues from them either by talking (Fissionchip have created their own parser) or fighting (hence the swordplay) and finally reach your goal of retrieving the wonderful *Kristal* – you hope. Not too different from many scenarios that have come our way, but what we saw of the stuff they are putting into *The Kristal* may certainly bring it into another class altogether from those many great sounding but not so great playing games we have all mistakenly bought.

The people behind *The Kristal* – in spite of the unfortunately facetious company name – seem to know what they are doing. They have brought in some of the top games creators in the business, all

sworn to silence, to help them bring about something that accords with their original Broadway musical dream. They have been signed up by one of the potentially strongest new names in the software business – Prism Leisure, who will bring out *The Kristal* under the well-known Addictive Games label. Epyx, one of the cream of US software houses, is apparently so delighted at being given the chance to release *The Kristal* in the US that it is already predicting that it will go to Number One there. In France, UBISOFT, the top software house, is doing the French version and Guillemot, the top distributor, is aching to get its hands on it. In Germany, too, there are secret *Kristal* fans waiting for the marks to pour in. Already, it seems, there is a worldwide quest for *The Kristal* . . .

Will it all be worth it? Will *The Kristal* be as great as it is dreamed? Well, you never know . . . What AUI saw, though it was still in rather a raw state, did make it look like Fissionchip could have created something; a whole package of impressive elements that if they are hung together as skilfully and excitingly as their appearance at this stage makes them seem, could just turn out to be that Amiga turn on, that smash hit that makes 1988 memorable – that Amiga-worthy Mega Game experience for which we have all been waiting. It might be worth your while to watch this space . . . We could all yet become ardent *Kristal* gazers. (*Kristal*? Fissionchips? Mega Game '88? Muswell Hill? What have you been drinking? – Ed.)

Z.M.S.



IZATION

FROST BYTE

Micro Value

Of the three games we have this month from Micro Value and Tynesoft, Frost Byte is both the cheapest and the most enjoyable. Frost Byte's origins stem from an old 8-bit title from Mikro-gen; not the ideal source for a new Amiga release, you might think (Mikro-gen have disappeared!), its origins certainly show through in the game, too.

Frost Byte brings you down to about the second or third rung on the evolutionary ladder, with you taking control of a small wormy creature. Instead of wriggling around, you walk by flipping end over end like a slinky. Your objective is to rescue five fellow kreezers from being eaten by a race of predictably moving sprites.

"Sweets can be found and eaten for differing effects. Red ones make you move faster, blue gives bigger jumps and green sweets allow you to fall further"

I might predict that Frost Byte will remain unique for you are unlikely to see another game like this on the Amiga, mainly because it uses such an old-fashioned design. The kreezers are trapped at the end of a series of screens of platforms which are patrolled by faces, birds, monks, eyeballs etc. Sweets can be found and eaten for differing effects. Red ones make you move faster, blue gives bigger jumps and green sweets allow you to fall further. This is clearly explained in the instructions which tell you "you cannot use a sweet until you have picked it up and used it". You would think that whoever writes these instructions could give the reader the benefit of having some intelligence, but

probably Tynesoft have had the problem of those (like me!) who don't customarily read instructions or those who don't understand anything! (Not like you, I'm sure!)

Something strange that I cannot explain is that sometimes when I loaded the game, the only sound effects to be heard were my shots and explosions, other times there were a few more. Anyway, even with a full set of effects the Amiga's sound chip never gets out of first gear. The same can be said for the graphics, a lot of which seem to have been unnecessarily roughly shaded.



Dodging the baddies and jumping around the platforms would not be enough on its own, and the original main character is all that saves the game from total insignificance. It certainly gives the game enough attraction to keep you at it for a short while, with a mildly addictive feel as you try to get one screen further. This wore off after I finished the first level, maybe because the game has to be played in exactly the same way each time.

Frost Byte (nice name that!) unfortunately suffers from the "Jet Set Willy" syndrome, a bug of sorts which continually kills you if you re-enter a screen directly on top of an alien. Priced at £14.95, Frost Byte is not by any means expensive but another fiver could have been knocked off to come in line with Anco's and Mastertronic's ranges. This is really just another dated game design that just cannot do the Amiga justice. It does have its moments of enjoyment and those who never played the Mikro-gen gem might like it.

T.H.



Graphics: 5
Sound: 4
Playability: 6
Value: 6
Price: £14.95

STAR FLEET 1

Electronic Arts

Star Trek type games have been around since before the Amiga was even thought of but it has taken until now for this simple idea to reach maturity. Available on some computers since 1985, *Star Fleet 1 – the War Begins!* will hardly stun you with its graphics but its sheer depth is uncannily compelling.

The game is all about tactical exploration of a vast galaxy, which is represented on small grid-reference charts which show your ship in relation to any other interesting items in that particular 10



by 10 quadrant grid. This is no arcade game but a test of leadership skill and decision-making; if you are to survive long as a *Star Fleet* officer your instincts had better be right first time. A wealth of data has to be assimilated as you plot your course, sending out probes, trying to take out enemy ships and locate star bases. Control is through both mouse and keyboard and there is so much to remember that things soon become hectic.

You begin the game as commander of an Alliance heavy cruiser, your duty to defend the area against enemy incursion; you are also on piece-rate, with a set number of deadly alien vessels to vapourise with your phasers or torpedoes. Sound familiar? Well, it's *Star Trek*, Jim – but not as we know it.

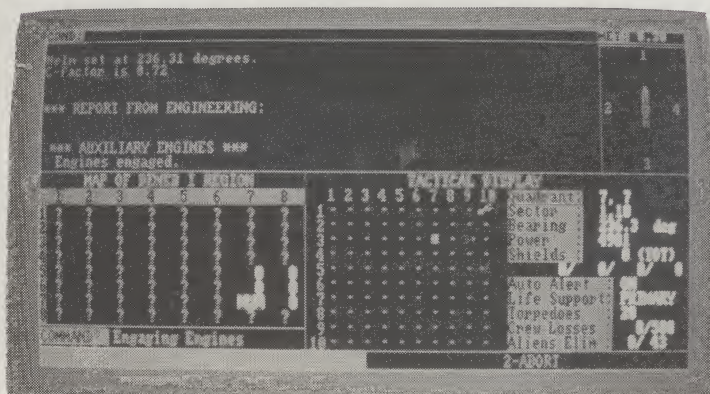
Obviously for copyright reasons there is not a whiff of anyone or anything remotely connected with the *Enterprise* or her crew but the language is all *Trek*-speak and familiarity with the T.V. show characters is a big help in making the fantasy adventure come alive.

As well as keeping your ship intact from the outside, you also have to contend with enemies aboard once you have been promoted from the easiest two levels of play. You only know when

one has beamed on when he starts sabotaging your equipment. I have never seen a battle strategy/simulation the equal of this.

Although initially difficult to learn the scenarios are varied enough to prove compelling as you try and work your way up from the humble ranks of rookie to Admiral. There is also the chance to earn medals on the way to the top of the *Star Fleet* heap and your record is stored to disk to enable you to progress at your own pace.

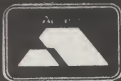
The software is accompanied by a library of documentation which will close scrutiny before you boldly go where no Amiga pilot has ventured before: There is a 69 page training manual to wet your appetite before diving into the 100 pages of the Officer's Training manual, which is used in the game's protection (type in a word from a given line) and for good measure there is a small booklet with Amiga-specific info and something laughingly called a quick reference card – it has well over a hundred items on it! Amid this forest of paperwork, one stark omission is the lack of a function key strip – annoying as the keys form a vital part of the game control.



You should have got the picture now – *Star Fleet 1* is more of a way of life than a game. Anyone who likes their recreation in 15 minute bursts will not even bother loading this one but people who revel in lengthy exercises in simulation can cancel all appointments for the next year and build up their ranking and expertise. That is not to say the simulation is lacking in excitement – it's just that it is more in the mind than on the screen. A great example of its type with a wealth of features hidden beneath a plain exterior: but do not part with your cash until you have seen it running and had a taste of gameplay. Meanwhile, beam me up Scotty, there are Krellans on the starboard bow . . .

P.L.

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PRINTKIT IV

Armed with only a Printkit IV and a steady hand, Rico Gusman upgrades his 64's 803 printer to work with his new Amiga.

There is no doubt that many of those people lucky enough to own an Amiga will have upgraded from another machine. For many this jump will have been made from a Commodore 64. Unfortunately, the 64's peripherals such as printers, disk drives etc. are not compatible with the Amiga. These will probably end up being relegated to some dusty corner and replacement equipment will need to be purchased. This is fine for those with plenty of money to throw around but most of use have to scrimp and save up.

Now, however, thanks to Printkit IV from Avon Printer Technology, those of you with a redundant Commodore MPS 803 printer can give it a new lease of life. Not only will a Printkit IV

'What about my trusty 64 that I still use from time to time' well Avon Printer Technology have also included a switch so that you can switch out the Amiga circuitry and restore the printer to 64 mode.

Printkit IV comprises of a 3.5 inch disk containing a new printer driver, a resistor, a small integrated circuit, socket, a large IC, two IC sockets, a small switch and a piece of solder mop. The tools needed to complete the job are a soldering iron and a couple of screwdrivers.

It is a relatively simple operation to add the new chips to the printer but I must point out that it is not a job for those who like to rush into things. It requires accurate soldering and a mistake here could damage the printer and stop it from functioning prop-

the job. What the manual lacks in looks it certainly makes up for in user-friendliness.

The actual conversion consists of stripping down the printer and removing the circuit board, inserting the components and then reassembling the printer. You will also need to type in a short program, included in the manual, for the printer driver to work.

I am not an experienced electronics wizard, yet I found that by just reading the manual carefully and applying a little common sense here and there that a satisfactory result could be easily obtained.

The lead to link your Amiga to the 803 can be purchased separately (although why you would buy the kit without it I don't know) and is as easy to fit. A 24 pin serial plug at one end attaches to the Amiga while a 6 pin DIN plug attaches to the 803.

Once you have installed the components and linked the machines together you are ready to start printing. How does it print? Well, everything is much faster than before and the quality of the text is far superior than in its standard mode. Different weights of text can be printed in one pass with all the descenders appearing as they should. Flicking the switch on the back of the printer (never with the power on though) reverts things back as if there was no kit fitted so that your C64, +4, etc can still run things.

An upgrade kit consisting of a lead, disk and an integrated circuit is available for those of you who have fitted the earlier 803/64 print kit.

This is a versatile piece of hardware and is a viable alternative to purchasing a new Amiga compatible printer. It has the added advantage of allowing the 803 to retain its 64 capability. So hurry up, dig out your old 803s and start printing out those AmigaBasic listings!

R.G.

Price £39.95 + £15.00 for lead

Contact: Avon Printer Technology, Swindon House, 4 Howard Road, Southville, Bristol BS3 1QH.



allow you to use your old printer with an Amiga but it adds several enhanced features such as true descenders, bold, italic and single pass underlining. For those of you saying

erly. The instructions come on 12 A5 pages (no heavy manuals to digest here) and are written in such a manner that a complete novice should be able to confidently tackle

APL 68000

'A Programming Language' – originally designed for mainframes, is now available for the Amiga. Was the transition worth while? Bill Donald investigates.

Perhaps not every reader of *AUI* has heard of, let alone seen APL – short for A Programming Language. APL started life way back in 1962 with the publication of a book written by Dr Kenneth Iverson entitled "A Programming Language". Iverson's book is one of those classical computer science books in the same genre as the Donald Knuth series which gave momentum to the new technology. I believe the book is long out of print but, if you live in the UK, your local library may be able to borrow a copy from the British Library. So what is APL, the language that gives you the freedom of FORTH with the modularity of PASCAL?

The previous sentence may seem a contradiction in terms but the focal point of APL was in its ability to handle complex data structures. Until the C programming language arrived on the scene, there was no comparable language with such an ability. APL permits the programmer to define and name a single component of data, a sequence of components or a matrix of data components.

"The language is firmly entrenched in the mainframe world and is used extensively by many industries"

This means that you can manipulate very large matrices in the same fashion that you would a single integer value. The beauty of this is that the processing overhead is not as great as you would imagine and coupled with a powerful linear addressed processor such as the 68000, the results can be very quick indeed. For example, you can go through a matrix successively selecting and adding corresponding components without the need for counts or loop control mechanisms. APL has such a wide range of sophisticated mathematical functions that you apply simple sorts as well as full-scale matrix inversions. The func-

tions can be confined to a single line so that a sequence of functions can serve as the input data to the next function.

The language is very firmly entrenched in the mainframe world and is used extensively by many industries. A heavy user of APL are the international airlines with their complex flight booking and timetable requirements.

APL uses a range of symbols to represent each function which means that a standard character set is always used irrespective of the keyboard's national character set. In common with the FORTH programming language, programmers may define their own functions. However, unlike FORTH there are no reserved words in APL.

An APL program is actually a collection of programmer-defined functions. These functions can invoke each other and pass data but like PASCAL, each function is self-contained. The advantage with this strategy is that de-bugging is made very easy since each module can be thoroughly tested. It also means that a modular approach permits the flexibility of a *top-down* design to your code.

The APL language in this implementation is interpreted which gives instant feedback on your code. However, the slowness attributed to interpreted languages is easily offset by the conciseness of coding. A few lines of APL can perform an awful lot. This implementation of APL uses the concept of the *workspace*.

A *workspace* in basic terms is a collection of the data components and functions. There are various types of *workspace* within APL 68000:

- AMFILE** – Amiga DOS
- TOOLS** – Keyboard, mouse and multi-tasking
- MENUS** – Menu structures of Intuition
- DIALOG** – Requesters and alerts of Intuition
- AMGRAPH** – Low-level graphics (line and polygon draw)
- WINDOWS** – Screens and windows of Intuition
- SOUND** – Sound and speech
- ARBIO** – Untranslated (arbitrary) serial port I/O

DEMO – Demonstration programs

These allow access to the system software of the Amiga in much the same way that most other high-level languages permit. This range means that you can write code to have replication, ambivalent functions, error trapping all completely within the Intuition environment. The user need never know about the underlying system. Unfortunately, the *DEMO workspace* was locked and although I was able to view a certain amount of the source code, this was only achieved after some fiddling – not good, particularly for beginners.

"A single character can perform the tasks of several command strings"

One fundamental difference between APL and other programming languages for the Amiga is the character set. In APL, a single character can perform the tasks of several command strings. To avoid confusion between what constitutes a command and what is actually a character, APL uses a series of symbols. These symbols, which appear to be based upon Greek characters, determine the action of a line. MicroAPL Ltd provide a self-adhesive sheet of these characters which are designed to be placed on the side of the keycaps.

This implementation of APL also supports multi-tasking. Thus, you can initiate another APL workspace and use the clipboard device to transfer data between. A full screen editor is supplied which has its own window attached to the active window. Cut and paste are provided but, curiously, no search and replace facility. A VT100 terminal capability is also built in to allow interfacing to another system such as a mainframe running APL.

There is a wealth of high quality documentation provided – an APL 68000

continued on page 38



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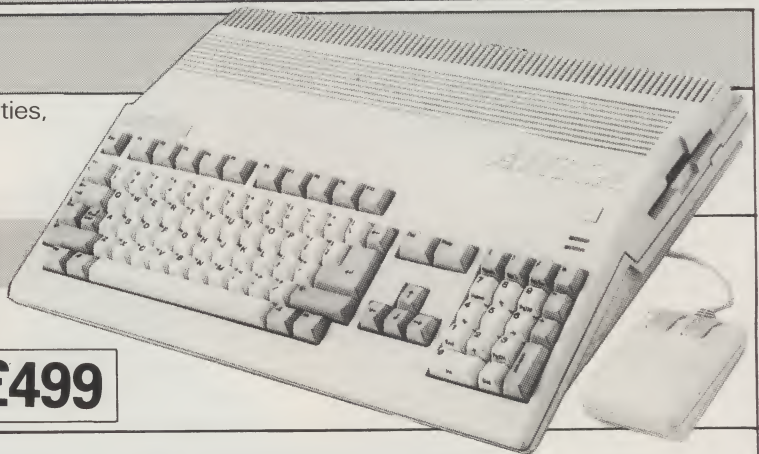
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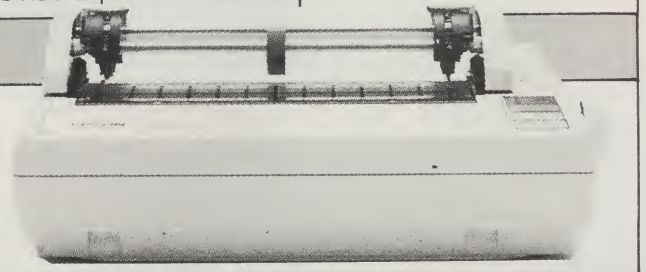
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BUGGY BOY

Elite



Better late than never... more and more software houses are breaking into the Amiga games market all the time, Elite being one of the latest. A colourful arcade machine is the source of their first Amiga release, Buggy Boy.

Five courses are there for the taking. Off-road is a race around five laps of a single track, while North, East, South and West each have five different stages between you and the finish line. Although there are no other cars to race against, the tracks are littered with rocks, gates and walls to be dodged, and flags and gates to be driven into for points and time.

Compared to 3D race games of the past, Buggy Boy is very ambitious. Not content with a stripy kerb and roadside scenery, it has loads of obstacles whizzing out from the horizon giving the screen a very busy look. Logs act as ramps, jumping the buggy into the air to clear fences and walls. Footballs can be bumped into the distance for more points.

Roadside signs warn of bridges which are easy enough at first but just add a few rocks on a single track road and things start hotting up. A solid looking bank crops up now and then to show off your buggy's tyre tread. Tunnels have been included which work very effectively, breaking up the more standard sections. A map is shown at the top of the screen, indicating your position, which looks nice but is very inaccurate.

Impressive sound is a quality rarely found in race games. The usual engine drone is there with a few jingly effects. Between games a tune more suited to a cockney pub knees-up makes itself heard. Some of the visual effects are excellent, such as the tumbling buggy and twisting tunnel sequence. In contrast, the explosion as you collide with a wall is pretty weedy.

It would be too much to expect Buggy Boy to come up to the standard of the coin-op in terms of speed, but a great job has been done. Control is responsive and everything moves fast enough to be convincing. I never found the coin-op particularly appealing next to the likes of Enduro Racer and Out Run, but in its Amiga format it makes a much stronger impression.

A few points that could have improved it are a satisfying completion sequence and a little tougher gameplay. Apart from that, Buggy Boy has been converted extremely well and will not disappoint fans of the original. Let's hope Elite can keep up the standard for future releases.

T.H.

Price: £24.99

Graphics: 9
Sound: 5
Playability: 8
Overall: 8

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THE AMIGA SYSOP

Intrigued by the mysterious world of Bulletin boards? Wonder no longer – Stuart Williams explains all.

Communications enthusiasts who have gained experience in the use of modems to access systems on the other end of their telephone line, often ponder on the possibility of setting up their own system; after all, why spend money to call the world when, with the right knowledge and a little effort on your part, the world will call you?

In the world of communications, what often appears to be a simple task, i.e. the running of a Bulletin Board, can turn out to be a minefield of problems, as well as a source of enjoyment! There are many things you need to consider before taking on the responsibilities of becoming an Amiga Sysop (SYStem OPERator).

The first step is to decide what kind of system you can afford to run and it is essential to consider the hardware and software requirements you will need to provide a reliable service. To discover this, I logged on to some of the Amiga bulletin board systems (BBSs) and some of the 'general' boards.

Incidentally, although your main interest will undoubtedly be in the Amiga, there is no reason why you need to run your system on your favourite computer – if you have a suitable alternative micro, such as an IBM PC or clone, or even the venerable Tandy TRS80 Model 3 or 4 or an antiquated but reliable CP/M machine, then why not use this and save your Amiga for your other uses!

What is the recipe for success in setting up a BBS on your Amiga, then? First, take one Amiga – any model will do, with a minimum of 512K RAM, although those with memory expansion may find advantages to the availability of a large RAM disc.

Second, ensure that you have the necessary disk storage facilities to do the job properly! It is possible to run a small board on one drive but I do not recommend it, as you will soon run out of message areas and will have very little room for programs to be downloaded and uploaded by users! In any event, many of the popular software packages require at least twin drives. If you have more drives (the Amiga can use up to four including the internal unit) then so much the better but make sure they each have an independent power supply if you use more than two (one internal drive, one external), as some Amigas, particularly the A500, have limited capacity power supplies and four drives can be something of a strain! Such a multi-drive system can be quite adequate for a modest-sized BBS but ideally a hard disk of at least 20 megabytes capacity should be your eventual target. Not only will you vastly increase the capacity (and thus the possibilities) of your system but also the speed!

'The ubiquitous Hayes compatible modem, with auto-answer, is essential

Third, choose your software. There are a number of Public Domain or Shareware packages available for little cost, such as TagBBS (see Fish Disc 66, shareware). However, the most popular Amiga-based program appears to be BBS-PC, in the UK at least. Most good software sup-

pliers should be able to get this for you; like most 'serious' Amiga software, it is not cheap, at £99.95 but it is a versatile and reliable system.

The software choice really dictates the modem system and since all the bulletin board software currently available is of American origin, the ubiquitous Hayes compatible modem, with auto-answer, is essential. Since it will also require speed buffering if you wish to allow users to access your BBS at the common UK speed of 1200/75 baud, this definitely leaves the 'cheap' manual modems out in the cold. Many systems use the popular and relatively inexpensive Miracle Technology WS4000 modem, though any of the new reasonable priced Hayes compatible devices should do the job. If you want to enable the modem to set itself to accommodate the speed used by the incoming caller, so be careful to check this before purchase.

It is possible to spend more than £500 on fast modems of up to 2400 baud full duplex but since most users will have 300 baud and/or 1200/75 baud systems, a modem with those speeds will be quite sufficient and it should be possible to purchase one for between £140 and £200.

One final expense (probably the most important!) is a telephone line. Few budding sysops are able to get along by sharing the voice line of the house – to do justice to the board, 24 hour access to its users is essential; what's more, strange warbling tones appearing on the 'phone in the middle' of the night are hardly likely to endear the other inhabitants of the house whether parents or wife, to you! Part-time systems are usually more trou-

cont. on next page

continued

THE AMIGA SYSOP

ble than they are worth, as you will inevitably find callers have your number but not the opening hours!

Your local British Telecom 'phone sales department will be able to advise on the installation costs of a second line; it may even be possible to make a saving by having the line set up for incoming calls only. Thankfully, you will not need to acquire a telephone with it, thus reducing rental charges even further. Remember that unless you are in a particular noisy exchange area, you will not normally need to go to the extra expense of a special data line.

Once you have acquired the necessary gear (and recovered from the bill!) you are ready to design the layout and 'feel' of your bulletin board. If you have any particularly strong interests, such as programming, games etc, or even non-computing hobbies such as astronomy, music or photography, or science fiction/fantasy, you might wish to give the system a specialist theme that will attract users and keep them returning again and again; the Gnome at Home, for instance, (a Viewdata BBS, similar to Prestel) based in London, has a unique style according to its name!

The BBS system software will enable you to split your board into specialist messaging areas, on any subject you choose and will also enable an Email facility whereby private messages may be sent and received by users of the board. Naturally, the Sysop sees all and knows all, so it is your responsibility to see that nothing illegal is going on via your computer! Most message areas will be 'public', enabling anyone to read, comment on and reply to other messages. Private messages can also be left in these areas, where, like Email, they will be readable only by the person they were intended for and the Sysop.

If you have software available for download, make sure it is only either Public Domain or written by yourself, as commercial software appearing as downloads without permission will land you in hot water! Speaking of software, if you have a lot of it available on the system, in addition to a good messaging area, you will attract two kinds of people; those who mainly use the message areas as a forum for chat and advice, who treat the board with respect and the download area as a bonus and the software hogs, who will attempt to log on for hours on end and 'rape' the download areas, blocking the system to legitimate users and never bothering to leave any messages. These latter types should not be encouraged, as they spoil things for everyone else – any BBS user will recall the frustration of waiting hours for the engaged tone to disappear.!

'It is your responsibility to see that nothing illegal is going on via your computer!'

I contacted several Sysops to see what their comments were on running a BBS. Clive Branson, co-sysop of the TABBS system run for the Amiga User Group (Leicester 550893, 6pm-9am weekdays, 24 hours Sundays), was typical of the operators to whom I spoke. He said that they had few problems with the idiots and would-be 'hackers' that occasionally appear on the boards; he also found the software and hardware (BBS-PC, Amiga 1000 with 20 meg hard disc and WS3000 modem) generally reliable after minor teething troubles in the early days. His

system has a public area but is mainly intended for AUG members, who have private areas and varied software available for download; access to these areas being included in the club's subscription. TABBS seems fairly typical of the Amiga BBSs but appears quieter than most to the non-AUG caller, due to the limitations of the public area; AUG members will find a lot more of it!



So, then, to sum up, what do you need to do to become an Amiga Sysop? You have to be prepared to invest a fair amount of money in good, reliable equipment; you need also to invest a lot of time in looking after the system – although it will run itself much of the time, you will need to edit the message areas regularly, as well as taking on the responsibility of keeping an eye open for troublemakers. It's also handing if you have a store of good ideas to make the system interesting to the users and are prepared to keep in touch with them regularly via your system; the most popular boards are those with a friendly atmosphere!

I hope, I have not put you off running your own Bulletin Board with all this talk of money and responsibility – there is a great deal of pleasure to be gained from managing such a system, not least of which is the making of hundreds of new friends! Go to it and watch the world beat an electronic path to your door!

S.W.

continued from page 32

Language Reference manual running to over 300 pages and an Amiga-specific manual containing over 60 pages. A quick-reference card and keycap stickers complete this professionally presented package.

My only real complaint about APL 68000 was the lack of meaningful example code. I would have liked to have seen more and to be locked out of the demo code was a serious error. A new user has enough problems coping with the new keyboard characters and it is always a good idea to make it possible to get something up and running fairly quickly. In addition to this, APL books are not exactly thick on the ground. The only one

APL 68000 continued

I was able to find was *APL is Easy!*, Turner J. R., ISBN 0-471-85882-X, Publisher – Wiley at \$19.95. I would recommend that beginners obtain a copy of this book to assist in learning the language.

It may be a good idea if MicroAPL put out a demonstration disk at a nominal cost to show what APL 68000 looks like. I am quite certain that this would be of benefit in capturing potential sales in what is undoubtedly a fast and powerful language. APL is made even better in an Amiga environment. Another suggestion would be the inclusion of software to download the special APL characters to the printer. This would avoid the need to switch an ASCII printer into graphics

mode in order to achieve hard copy of the special characters in APL program listings. MicroAPL could use EPSON as the model since this is likely to be the most common type of printer. Alternatively, provide the user with a design matrix of each APL character so that the user can produce their own download software. The documentation does make mention of using a daisywheel printer with a special APL daisy but this seems to be a sledgehammer-to-a-walnut approach.

B.D.

Price: £99.00

Contact: MicroAPL Ltd, Unit 1F, Tide-way Industrial Estate, 87 Lirtling Street, London SW1 5BP.

More Amiga Answers from Yuri Large, the Amiga User Group's Technical Whizz-Kid.

Dear AUI,

I only noticed your new magazine on the local newsagents shelves a couple of months ago. I have since been converted to it, from an American magazine. Your magazine is much more informative and relevant than your competitor and the Crib Cards are a boon for quick reference when I have a problem on my A500.

I have had my A500 for 6 months now and the time has come to expand its memory. I am unsure as to the best way in which to go about it. I have heard that the internal 1/2 Meg expansion moves the screen location and some programs will not run with it. However, I have not heard this said of the external memory expansions. Could you please explain if the external memory has the same problem and why the extra memory means some software will not work?

Yours sincerely,
Steve Sheldon.

Dear Steve,

Unfortunately the problem you have mentioned is common to all expansion memory on the Amiga. The 512K of memory supplied with the A500 is what is called "Chip RAM". This means that it is memory that can be accessed by the custom chips of the Amiga. Due to the original design of the Amiga only this 512K of memory can be used by them. The importance of this lies in the fact that the custom chips control the display. Therefore any image or picture to be displayed must be stored in Chip RAM. Some programs on the Amiga do not take account of this when using an Amiga with expanded memory, usually called "Fast RAM". This causes garbled screen displays at best but could result in the Amiga crashing. Most new software will take into account the amount of memory your Amiga has and therefore I would suggest that in time very little software will fall at this hurdle.

Some external memory units are supplied with a switch so as to allow you to turn off your extra memory when using a "problem" program. This is of course the ideal solution, the only drawback being that external memory expansions are usually more expensive. And thank you for the compliments, we'll try to go on improving AUI.

Dear AUI,

I would like to congratulate you on your new magazine which is very interesting indeed. I find it most helpful being a new Amiga owner as up until now there were no magazines for Amiga Users and I had

to rely on your sister magazine CCI.

My queries are as follows:-

1. As you very well know, there are lots of Modems about for people who have never used one it is very confusing. I need a modem for accessing Bulletin Boards and to be able to download PD and info, please would you advise me on the cheapest and best modem suited for my purpose.

2. Do you know of any way to be able to write "C" programs without the aid of a "C" compiler (through the Amiga itself)?

Yours faithfully,

S. Arillo.

Dear Mr Arillo,

1. In order to log on to most bulletin boards in the UK you will need a modem that supports both the V21 and V23 communications standards. This along with Hayes command set compatibility are the two major points to look for when selecting a modem. There are two for less than £200 that I can recommend from use. These are the Pace Linnet and the Miracom (formerly Miracle Technology) WS4000. One of these along with a lead and some comms software should put you squarely on the road.

2. In order to write C programs you need nothing more than a text editor. Unfortunately to run them you will need a C compiler to translate your text file into an executable file. There is however a C compiler now available (and working!) in the public domain.

Dear AUI,

As a 'piracy extension proxy' the Virus is a good benchmark: in Italy no Amiga user is immune. But here piracy is related to poor software distribution and no serious copyright law. Personally, I purchase programs by mail - both in England and in the USA - but it is to be added that I can speak English AND I read foreign computer magazines AND I have a Master Card. Perhaps the average teenager is unlikely to meet the above conditions.

Along with the first virus (the one created by SCA), I experienced some problems with the Amiga (most remarkably, a lot of disks destroyed by the DOS itself).

I said the 'first' virus mainly because a few days ago, while using a disk editor to correct an error inside SSI's Kampfgruppe, I noticed that block 0000 showed the string 'Virus by Byte Bandits . . . 9/87 . . . number of copies:'

This new virus randomly stops the running program (the monitor turns black); it tries to copy itself onto EVERY disk inserted into the drive (write-protected disks too).

I thank you very much for your attention and look forward to news from you.

Yours truly,
Mauro Benedetti

Dear Mauro,

I am sure someone will soon be supporting the Amiga in Italy. At present all we can do is sympathise and publish your letter in the hope that an aspiring businessman answers your call. Though there is an official distributor of software in Italy who sells under the Commodore name. Anyway, I do have some more news on the Byte Bandit virus; as with the SCA virus there is a backdoor. When the Amiga freezes up just try this; press and hold down each of the following keys in this order:

Left-Alt, Left-Amiga, Space, Right-Amiga, Left-Amiga.

The Amiga should, after a few seconds, miraculously recover, at which point you can save whatever you may have been working on. Then turn off the machine and follow the procedure described in last month's Amiga Answers. For more details see the Virus article elsewhere in the magazine.

Dear AUI,

I was about to invest in the new Word Processor/Database program Write and File from Softwood when I read your article in Test Drive of your March 88 issue.

By all accounts it is a marvellous program and very flexible to use. You indicate that there is a catch if you only have an A500 as I have. Do you have to have 1 Meg or more to run this program? Can I run it on my 512k, even if I accept some limitations? Or is it just not worth it?

What would you recommend as the best way to expand the memory of my machine? So far as I can see I can either spend about £113 on an internal 512k RAM card or pay about £130 on a 1 Meg Cumana drive. As the program comes with two disks would it be right in thinking an extra drive with memory would be best for this application?

A word of warning if I may. When I ordered my printer I asked the shop concerned for a 24 pin printer driver.

They sent me a Workbench for an A2000 which, when I checked it with a Virus Killer, had the Byte Bandit virus embedded in the first line of the Boot track. Yours faithfully,
A.P.A. Arengo-Jones.

Dear Mr. Arengo-Jones,
Softwood's Write and File requires 1Mb of memory to run therefore the most essential add-on will be the extra half Mb to take your Amiga's memory up to 1 Mb. But as you will probably know from the way your shoulder aches after a computing session, a second drive is a good idea as well. Even with 1 Mb of memory Write and File is a bit tight for room. You will find that to print in graphics mode you will need to reduce the amount of memory given to the screen display in order that it will not crash. This is one of the options on Write and File's preferences menu.

Your warning is a good one. I can tell you from my experience of running a PD library that these problems are almost inevitable. It seems that no matter how many disks you clean, within a week you are bound to have the virus back again. Of course most shops will make every effort to stop the spread of the virus, as it ruins a lot of stock. A few infected disks are always going to slip through but please don't blame us in the industry too much!

Dear AUI,
Can anyone out there help me? I'm looking for a 24 pin dot matrix printer which is fully compatible with the A500 – at around £500 – and must obviously include printer driver(s). I've noticed a few mentioned in various ads but I would prefer one which could be recommended by actual users! Also I'm looking for a complete video digitizing package consisting of: Digitizer, Frame Grabber and Genlock. Is there such a package on the market – but not prohibitively expensive? I've seen ads for all three as separate packages – surely someone must produce one?? Any help would be appreciated.

Keep up the high standard AUI – the price of the mag seems justified – it's no comic!
Cheers,

Mr. V. Szarmach,

Dear Mr. V. Szarmach
Most 24-pin dot matrix printers currently on the market are compatible with the Epson LQ range. This is good news for all Amiga users as there is a new Epson LQ driver on the Workbench 1.3, which should be released very shortly. Therefore most of these printers will work beautifully with an Amiga. Of the current crop of 24-pinnings available I would recommend one of these three: Epson LQ500, NEC P2200 or Star LC24-10. If you are desperate for the 1.3 printer drivers for your newly bought 24 pin, I

would suggest that you invest in one of the packages that already include them. The cheapest on the market is, I believe, Kind Words. Then you can copy them over to your normal workbench disk (a backup, of course) use this command, after booting up with the Kind Words disk and putting your workbench in the second drive:

`copy devs: to df1:devs all <RETURN>`

The package you suggest sounds great. However, the three abilities you mention are perhaps not as closely related as you might think. Each of these facilities requires its own circuitry and software. Due to this there is at present no product such as you mention, as it would in my opinion be "prohibitively expensive".

Dear AUI,

This is a reply to the enquiry by Paul Andreas Overaa with regard to running an Amiga 2000 without the fan connected. After some research into the problem, checking current drain and the temperature of the power supply etc., I would say that a B2000 with a second 3.5 inch drive will come to absolutely no harm whatsoever from this modification. This is by no means the limit to which the power supply could be operated without cooling but when used within these limits there is a large degree of safety involved.

The only reservation that I have when performing this operation is with regard to the invalidation of guarantee or service contract. Personally I think that the peace and quiet is worth it.

Finally, for your peace of mind I am a fully qualified electronics engineer with a great deal of experience in the field of computing. Combine this with the fact that I am also 'broke' and you have a very thorough person when it comes to working on his own expensive (impossible to replace because I've got no money) equipment.

Yours faithfully,
Barry Swanborough.

Deary Barry,

Thanks for your research on this matter. I know for a fact that a lot of 2000 owners will be keen to do this, as apart from being noisy the fan also drags a lot of dust and dirt into the disk drives causing unneeded wear and tear. However, when doing this please take heed of Barry's warning that this action will void your warranty. If you do try this modification make sure you keep a watch on the power supply unit to make sure it does not get too hot, as 2000 PSUs cost over £150 to replace.

Dear AUI,

I am living in West Germany and will return to live in England in the future but I wish to buy an Amiga 2000. One of the facilities that I would want to use quite

extensively on the computer is the graphics and sound, especially in combination with my video camera 'Sony Pro' which I bought here in Germany. This leads me to ask the following questions which I hope you can answer:

1. If I buy my Amiga from Britain would there be any interface problems with my video camera?
2. If I buy the Amiga box from Britain and the monitor from Germany would this work?
3. If I buy my Amiga in Germany will I be able to use it in Britain without any problems?

Yours sincerely,
Thakorbbhai K. Patel.

Dear Thakorbbhai,

Luckily enough for you, you should have no problems with any of your machines. The German mains supply is very similar to that of the U.K. so no problems there. With regards to your video equipment, this is all covered by the European video standard which is called PAL. Therefore your monitor and camera should work with TVs and videos in both the UK and Germany.

Dear AUI,

Thanks for some good information about the AMIGA 2000. In the issue of AUI February 1988 page 50 you say that both the parallel and serial port of the Amiga 2000 are IBM-compatible. To install the printer port for use with the XT bridgeboard, you can add the command LPT1 in the startup-sequence but what about the serial port? My trader cannot explain to me how I can install it. The program PCTOOLS on the IBM says: NO serial port! Can you help me?

Yours faithfully,
Gerd Bleckwedel.

Dear Gerd,

Sorry but I can't help. There is no way to install the Amiga 2000's serial port for use with the XT bridgeboard. As you say, the program LPT1 in the PC drawer on the 2000 workbench will allow use of the Amiga's parallel port from the bridgeboard. The only way to get a serial port for use with the bridgeboard is to buy a card for the PC which provides one and fit it into one of the PC-type slots on the 2000's motherboard. Please bear in mind when doing this that the system reserves COM2: for itself and therefore your card must be configured to act as COM1:. Fortunately these cards are not expensive and you should be able to acquire one for far less than £100.

When referring to the fact that the A2000's and the A500's serial and parallel ports are IBM compatible the reviewer meant that they were configured identically to an IBM PC's ports, unlike the A1000 which has non-standard parallel and serial ports.

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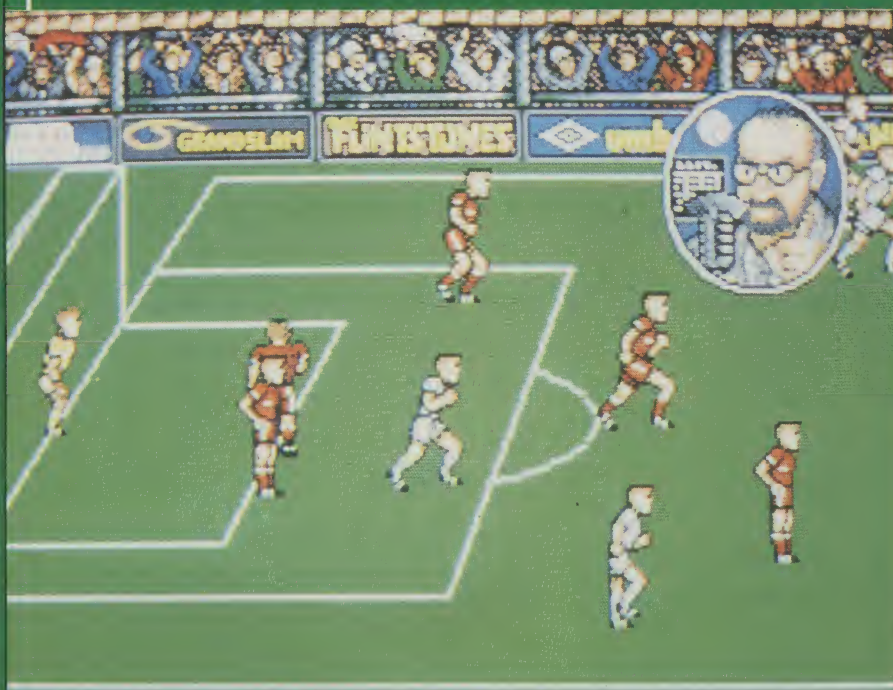


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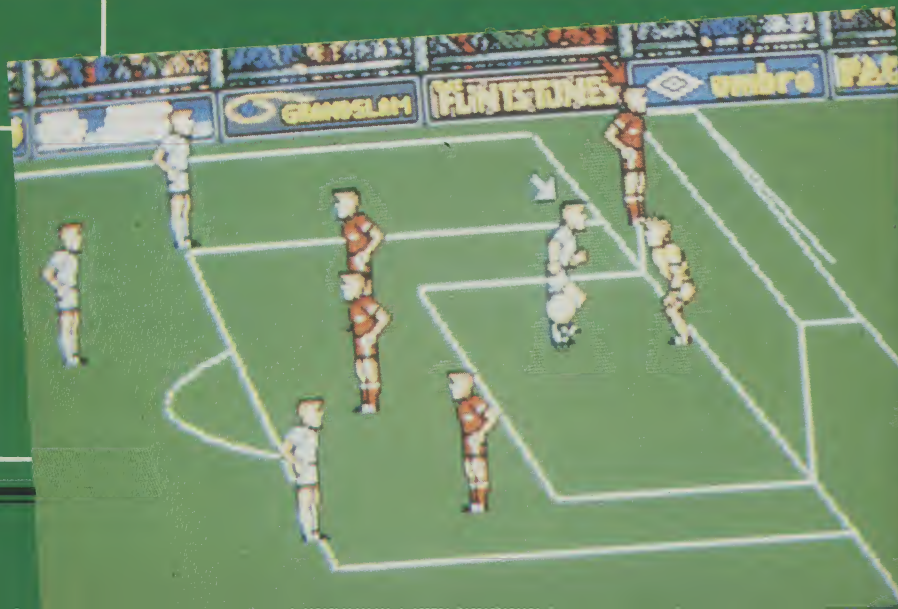


Feeling pretty annoyed with England's absolute trouncing in the European Championship? Grandslam's Kickabout gives you the chance to replay the whole competition, and with any luck you might even win a few games this time.

One or two players can take part in the competition and can choose to play for any country in Europe. Two groups are then generated by the computer, through which you play to the semi-finals and the finals. This means that two players cannot just play each other straight away, only when they happen to meet in the competition. The simple addition of a two player practice mode could well have improved the situation.

During the game, the player nearest the ball is controlled, indicated by an arrow above his head. Both players have a "kick-o-meter" which is controlled with the fire button; the longer you hold the button the harder you kick the ball. Unfortunately, to give the ball a decent whack you need to hold the button for ages, by which time you may have been tackled. Even when you do get a good swing at it, it may hit another player if there is one coming in to tackle.

The screen is amusingly always packed full of Peter Beardsley look-alikes who all want a bit of the action. This means calculated runs and passes are



PETER BEARDSLEY'S INTERNATIONAL FOOTBALL

Grandslam



difficult to achieve; the game often becomes a real scrambling match with excitement piled on as a bundle of players chase an unpredictable ball.

Some of the graphics are very good and the size of the sprites makes this a true Amiga level performance. Place kicks are signified by a sampled whistle and an inset of the referee. Similarly when a goal is scored, a cheer of the crowd is accompanied by close-up of the commentator. "P.B.'s" graphics could benefit from greater emphasis on smoother animation and a properly constructed goal instead of the old style wire frame it possesses.

An interesting quirk can be witnessed in the goal area when an attacking player suddenly decides he wants to be a defender, and wallops the ball back up his end! Stress on the star players from their bank managers? Some extra features such as tackles, headers, fouls or penalties would have spiced it up a bit, drawing it away from the graphically enhanced 8-bit game that it seems to be. Nevertheless it is the only football game on the Amiga, and if you have the urge to emulate Eurochamps Wonderful Holland, with plenty of excitement if not as much skill, then Peter Beardsley's International Football will be a welcome addition to your Amiga games team.

B.V.



Graphics: 8
Sound: 7
Playability: 6
Value: 7
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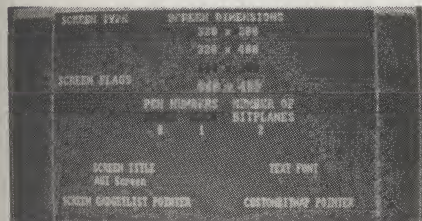
POWER WINDOWS 2

Programming the Amiga can be confusing and tedious. Giulio Zicchi examines the latest version of this labour saving program and awards it top marks.

As sales of the Amiga steadily improve, it follows that an increasing number of people will want to program the machine themselves. The logical route to take is the road that leads to INTUITION, the multi-windowing environment that makes the Amiga such a pleasure to use.

From the programmers' point of view, Intuition is one of the system libraries comprising a collection of "C" language functions held in the Kickstart ROM and provides a relatively easy way of accessing the powerful graphics and sound facilities of the machine.

In many cases these functions require a number of parameters to be passed to them in order to set things up correctly. For instance, to open up a new screen no fewer than thirteen variables have to be passed to the system. Arranged as a structure of varying data types, these variables control such things as the screen dimensions and resolution, colours to use for the screen gadgets, a pointer to text for the screen title etc.



Each window that opens in a screen, each menu attached to a window and each item attached to a menu has its own structure containing variables which control its characteristics. Therefore a lot of programming time and indeed debugging time, is taken up with the correct typing in and checking of these variables.

Wouldn't it be nice, then, to use a utility that allows you to create the screens, windows and menus that you need with a few simple clicks of the mouse button and let the utility create the source code. Enter Inovatronics and Power Windows 2.0. When I first received this program for review I was immediately impressed. Having used it for a couple of weeks now I am even more impressed. I would even go as far as to say that this is easily the best programmers' aid for the Amiga that I have seen. Basically, Power Windows lets you see how your application will look as well as creating the source code for the relevant data structures in 68000 assembly language, "C" or Modula 2.

On booting PW2 you are presented with a variety of options, several of which are ghosted to prevent their selection at this point, since it is impossible to have a menu or gadgets before you define your window. Starting with the screen options, selecting "define screen type" will present you with a window containing the various screen attributes which you may now select to define your screen. The screen type, resolution, text, flags and bitmap pointer may all be chosen at this point and with a simple click of the OK gadget... Hey Presto! Your new screen will appear. Once your screen actually exists, the "screen palette" option may be chosen so that you can define the colours that will be used by your new screen.

From here, the window menu options may be chosen and from this menu alone there is a wide range of choices which will fully control the appearance of your chosen windows.

Particularly useful is the "grab window" option which will tell you the names of all the current windows that exist and allow you to import that window and its' characteristics and use them in your own program. All of the window flags, minimum and maximum window sizes, title bar text and IDCMP flags are set up easily with the mouse and exiting this option will cause Power Windows to show you your new screen and your new window exactly as they will appear.

At any stage, you may save the current state of your work to disk and use this as the basis for a potentially larger project in the future; after all why start from the beginning every time?

Programming via the Intuition library became confusing, even tedious, when setting up the relevant menu structures and linking them together. Power Windows has made that a thing of the past.

From the "menu" menu (!) you are able to edit the menus that will appear on the menu bar at the top of your screen and having done this you can then work on the items and sub-items pertaining to those menus. The range of choices given here is vast, with options to let Power Windows format things automatically or leave it to the user; menu flags, text, drawing modes, hitbox sizes and dimensions are all selected from this menu. Sounds comprehensive doesn't it? It is — and there is more to come.

Gadgets are the workhorses of Intuition and their implementation within Power Windows is complete. Whether you require string, boolean or integer gadgets your needs are catered for. Needless to say, it is possible to select any combination of gadget flags, choose where in your

continued on page 48

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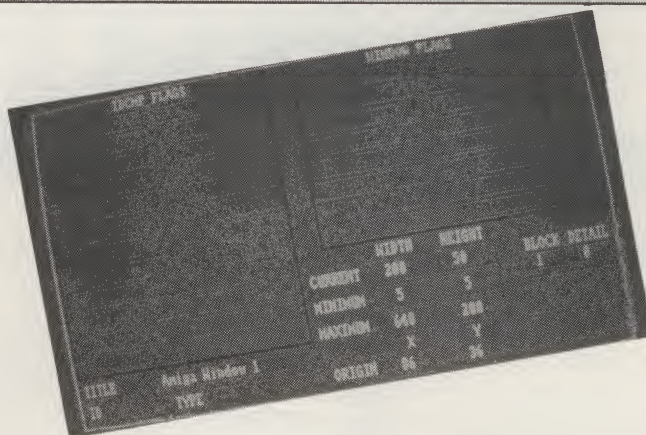
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POWER WINDOWS

window they will appear, set up a pointer to your own image data and give the label of your source routine that will execute when selecting the relevant gadget. Power Windows will even load IFF formats imagery to define the gadget.

When you have finally completed designing your application it is time to select the big one. Pulling down the "project" menu will reveal the hal-lowed words . . . GENERATE SOURCE CODE. Prompting you for a file name, Power Windows will write a text file to the selected drive. Options are available here to enable/disable source code generation for any or all of the following: screen, windows, menus, render, palette, gadgets, windowtext and events. Code may be generated in assembly, Manx or Lattice "C" or Modula 2 and code generation is extremely fast, even for large developments. In-



specting the resulting file will reveal the relevant structures in all their glory, complete with comment field, although this may be omitted if memory is tight. This file is now easily merged with your main program, depending on your particular source editor and all that is left for you to do is write the code for the application program itself.

To sum up, Power Windows is to Amiga programmers what Deluxe

Paint is to Amiga artists. If you are going to program the Amiga using the Intuition functions and you don't use Power Windows then you are a fool. It really is that good and I cannot recommend it highly enough.

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A PLEA TO DEVELOPERS

This is a plea from a commercial user of the Amiga to all the developers of the brilliant software that we use. Please could you incorporate a simple feature in future releases that would make my life, and (I suspect) a lot of other people's lives, a lot easier. I refer to the use of script files to control software and I shall outline our uses of this, and why I believe the feature would be easy to incorporate, below.

Preplay produces computer animations for the advertising industry, and we regularly use all the major packages, i.e. DeluxePaint, DigiPaint, PixMate, Butcher, DigiView, VD3 (video digitiser), AudioMaster and Sculpt3D. It is the last in this list, Sculpt3D, that fostered this idea.

I cannot be certain, but it seems to me that this marvellous program existed in a less friendly form before being 'Intuitionised' and relased onto the mass market. This is revealed by the script language that mirrors the menu selection so accurately. This is one of the joys of Intuition, every command for most packages can be laid out so logically on menus, that frequently the manual is simplified down to a list of menu commands and what they do. My own programming experience suggests that good programs are constructed from many modules that are called from a control module whose task is to field menu selections and pass parameters into them. Surely this control

module can be easily altered to read a script file, leaving the program to work on time consuming tasks without user intervention.

Let me identify some ways that I could put such a facility to good use. Frequently Preplay digitises 40 or 50 video images at a time, using the VD3. Due to a programming oversight, the HAM pictures output by this program are only loadable into Butcher, which can then save them 'properly'. Even with a hard disk this process is very time consuming. A script that went like this:

```
LOAD "dh0:VD3-Capture/
video00.ham"
SAVE "dh0:VD3-Butchered/
video00.ham"
LOAD "dh0:VD3-Capture/
video01.ham"
SAVE "dh0:VD3-Butchered/
video01.ham"
LOAD "dh0:VD3-Capture/
video02.ham"
SAVE "dh0:VD3-Butchered/
video02.ham"
etc. etc.
```

could be left to run the software while we got on with something more creative.

Invariably the next stage in our process involves bringing the HAM pictures down to 32 or fewer colours. We find that the DigiView software does a superb job of this, but slowly. The script file could read something like this:

```
LOAD "dh0:prepared.pic"
; This picture prepared by the user to
have best range of colours
FIX-PALLETTE
SET-NUMBER-COLOURS 27
LOAD "dh0:VD3-Butchered/
video00.ham"
SAVE "dh0:27-Colours/video00.pic"
etc. etc.
```

We then use PixMate to PACK the colours at one end of the palette, and sometimes MATCH-WITH-OTHER pal-lettes. It strikes me that these com-mands, and most of the others, could be scripted.

Even the ubiquitous DeluxePaint could benefit from this treatment. We find that when stamping a brush onto a back-ground a smoother effect is achieved when AntiAliasing is switched on. This can take an age to draw, and could be automated thus:

```
ANTIALIASING-ON
LOAD.PICTURE "dh0:27-Colours/
video00.pic"
LOAD.BRUSH "dh0:Walk-Sequence/
man00.win"
POSITION 167 28
STAMP
SAVE.PICTURE "dh0:Finished/
video00.pic"
etc. etc.
```

I appreciate that our heavy picture generation is in no way typical, but given the diversity of applications to which the Amiga is being put, I cannot believe that we would be the only ones to benefit from this addition. It seems easy enough to implement, so developers, please 'THINK SCRIPTS'!

Steven Rodgers

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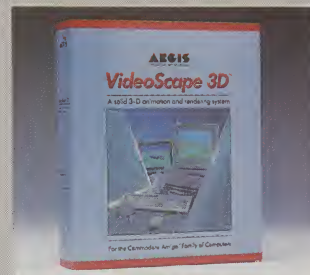
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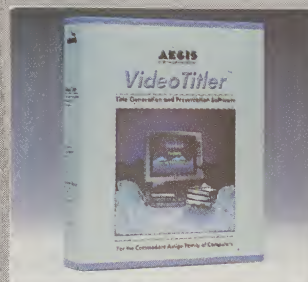
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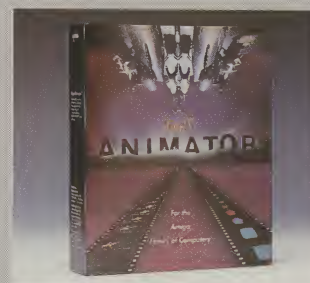
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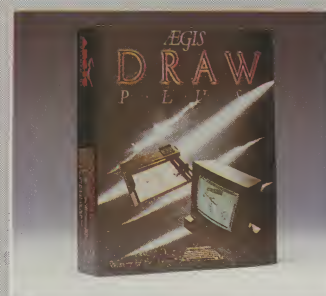
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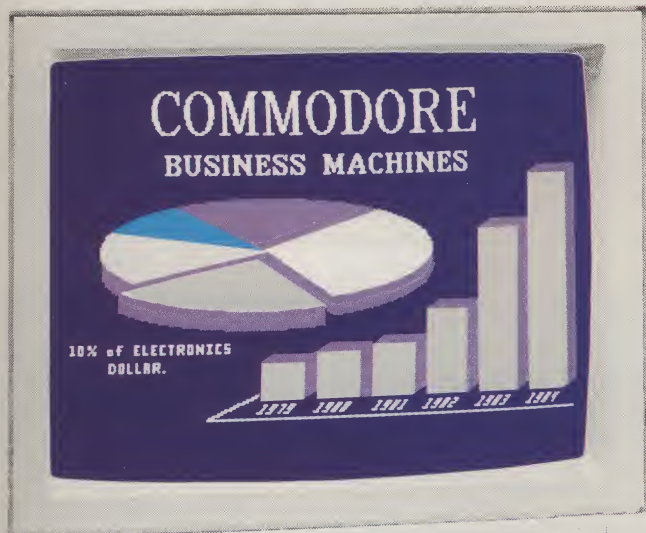
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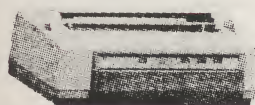
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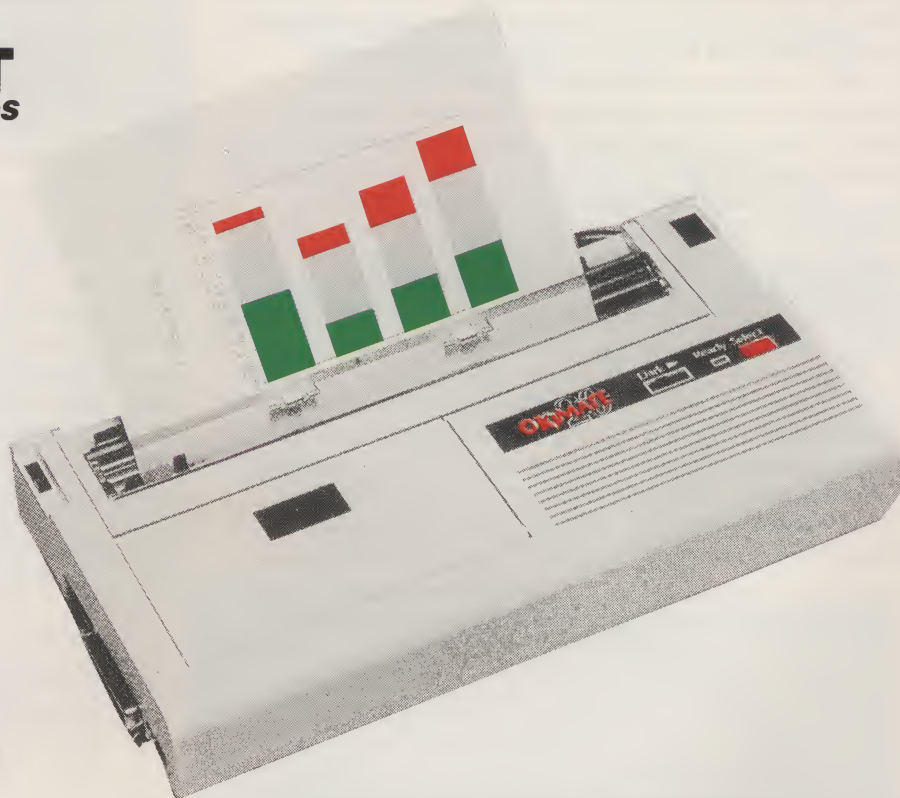
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Passengers on the Wind

Passengers on the Wind is Infogramme's entry into modern comic strip software, Andy Moss investigates

Francois Bourgeon is 'infamous' in France as the recipient of the Grand Prix Du Salon D'Angouleme, the most prestigious reward possible for comic strips. His pride and glory is a series of illustrated stories set in the Eighteenth century, concerning the adventures of a usurped Countess. The critics apparently hailed the perfection of the script and the accuracy of the strokes to make *Passengers on the Wind* a modern day classic, selling over 3 million copies. What Infogrammes have tried to do is to convert the whole thing into a computer adventure cum film with you taking the part of over 13 different characters.

The adventure takes place on the eve of the French revolution, during the time that a regular slave trade between France, America and Africa was at its height. Hoel, a sailor flees France when falsely accused of murder along with Isa (the usurped countess). Their missions are for him to clear his name, and for her to regain her titles. This they do after travelling through many lands, and as the player, you must find the right solutions in order to progress through all ten 'chapters' of the story.

This then is the basis for the adventure, and all is so good so far. Where the whole thing goes adrift is in the actual gameplay and screen structure. The screen is divided into three main sections, a graphic section where the main picture is displayed, a character box, which tells you which character is speaking, and a text window for well, text.



This is where it starts to get complicated. In every main scene (there is only one per chapter) you will have to click on a character in order to access it (Infogrammes call it 'confirming'). Unless you confirm a character, you cannot proceed with it. The



character then appears in the box to the bottom left of the screen. Next to this box are two bars called 'zones I and II'; zone I is clicked on to change the character, and zone II is used to select the appropriate text from a variety of responses. The aim is for you to control what decisions are made by each character, and how that decision affects the story. With me so far. In reality, this whole process is so cumbersome as to be frustrating in the extreme. Unless you click exactly on the bars, you get no response, and sometimes even clicking on the bar zones elicits no response, so really you get absolutely no satisfaction at all and end up totally fed up by it all. The secret of any successful game

'The aim is for you to control what decisions are made by each character, and how that decision affects the story.'

HAS to be smooth operation of the vital process of making the game run. In *Passengers on the Wind* this does not happen. That apart, the music and sound effects are very impressive, and make full use of the Amiga's facilities in this department. In the opening scene, you hear seagulls calling and waves crashing, and even a choral sound in the music score. The graphics are not Amiga state-of-the-art, but are adequate, no real improvement from the C64 version.

I am very disappointed with this release, Francois Bourgeon may well be a very talented writer and artist, but Infogrammes have not really done him justice. **RATING.....POOR.**

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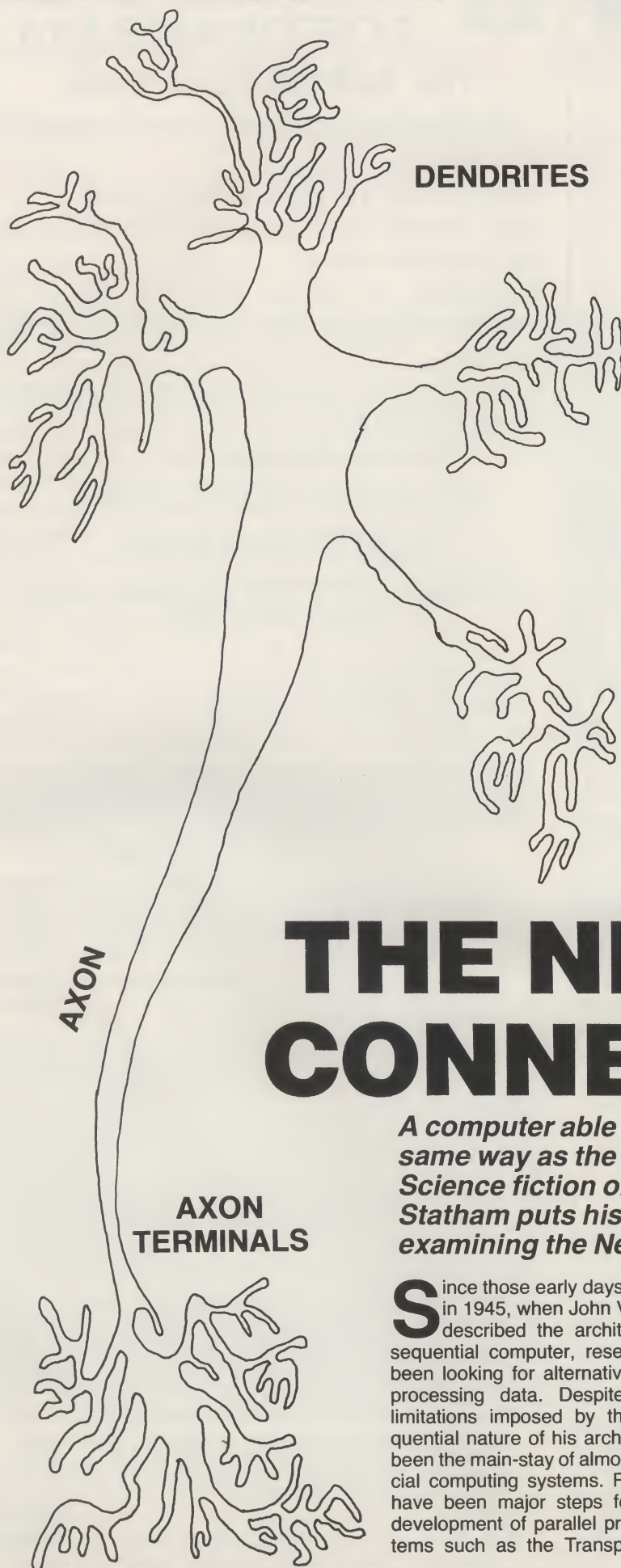
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A computer able to function in the same way as the human brain – Science fiction or fact? Alastair Statham puts his mind to examining the Neural Connection

Since those early days of computing in 1945, when John Von Neumann described the architecture of the sequential computer, researchers have been looking for alternative methods of processing data. Despite the severe limitations imposed by the strictly sequential nature of his architecture it has been the main-stay of almost all commercial computing systems. Recently there have been major steps forward in the development of parallel processing systems such as the Transputer. Another

has a long limb called an Axon from which it transmits. Fibres from the Axon connect to each of the receiving cells. Neurons also have receiving fibres, called Dendrites, which join with the fibres from the Axons of other cells. The point at which they join is called a SYNAPSE. The output produced by a Neuron is dependent on the input it receives. The inputs are not digital in the sense that each is worth a zero or one vote on the output state of the cell. Each input is given a weighted relative importance and

while some excite the cell others inhibit it, performing a function similar to a boolean NOT. This structure works so well and is so different from the Von Neumann Architecture that it is not at all suprising for it to be of great interest to computer scientists.

'If one in ten of your brain cells died while you were reading this you would probably not even notice.'

One of the areas which has caused the most headaches on traditional machines is image and speech recognition. It is not too difficult to compare two bit patterns. Normal machines can detect differences between two patterns very easily. What is far more difficult is checking whether two patterns are sufficiently similar to be a match, when the differences are not consistent or easily predictable. The brain is extremely good at recognizing visual or aural patterns and copes with major data errors and omissions with remarkable ease. Image recognition has also been a favoured application for AI researchers. The original research was based on a parallel concept very similar to the function of the brain's neural network. The designs included electronic versions of the neuron which were simple switches with many inputs and outputs. When enough inputs were switched on the switch would activate and send a signal to its neighbours on the net. A piece of data would be represented by the collective on/off pattern of the switches. When idle, all the switches would be in the off state but the data still held by the state of the junctions. This was achieved by making the junctions not a simple connection but a variable amplifier/inverter able to strengthen, weaken or even negate the transmitted signal. The pattern of the connection settings determined the output produced by a given input pattern and thereby formed the basis of the memory. If, under the control of a master area, separate portions of the network were to process their own part of an image it was hoped that whole images could be processed at once instead of bit by bit. The system could learn related patterns by enhancing the effect of connections producing accurate answers and limiting the effect of those causing errors. As the overall connection pattern became more accurate the system would get better at its recognition task. In the late fifties the Perceptron was built using these concepts. It was discovered, however, that the size of the network was severely limited by the complex and time-

consuming task of adjusting the connection levels.

By the late sixties the Perceptron had fallen from favour and research switched to Expert systems, running on Von Neumann machines. Expert or Knowledge-based systems are little more than large collections of rules. They are used to offer alternative solutions, compare the merits of alternatives, explain solutions, or ask the questions required to arrive at an answer. The user interface is usually plain language, which means that most expert systems appear to work like an adventure game. The user asks a question or gives an instruction and the system either provides information or asks a question. The rules controlling the system are partly program-

'Expert or Knowledge-based systems are little more than large collections of rules.'

med and partly derived. The basis of the knowledge is a set of rules about the subject on which the system is expected to be expert. These rules are normally provided by human experts assisted by Knowledge-Engineers. New rules may be derived from the combination of existing rules and data fed to the system. Once working the system can become more expert than any living source of information. These systems still are limited by their inability to deal effectively with abstractions or incomplete, uncertain data. They are, however, particularly effective in the fields of medical diagnosis and prescription, geological prospecting and electronics design.



As the limitations of Expert Systems became apparent, interest was renewed in the old Neural-networks. New technology and ideas were applied. The new neural systems were based on the old type with a few major differences. On the old systems each switch performed an

on/off function according to its inputs. The new system uses artificial neurons which respond to their inputs to a variable degree. Instead of an immediate switch there is a gradual and measured response. The ability to affect the behaviour of a neighbouring neuron and the introduction of feedback loops eases the control of the system. New algorithms now exist to determine the values passed to equations which define the settings of each connection weighting. The system can now retry different settings until it has found the correct ones. This removes the old size restrictions and allows much more complex nets than had ever been thought possible. The ability to influence an adjacent neuron provides more consistent data in a visual system, which allows the recognition of texture. Awareness of surrounding data assists in the detection of boundary conditions such as the edges of shapes or, where distance information is available, the edges of objects.

'The day is fast approaching when the intelligence at the disposal of mankind may not all be of natural origin.'

These new developments have also been utilised in the production of systems able to read text and speak the output. A well known example of this is NETALK. This system, developed at Princeton University, consists of hundreds of neurons with thousands of connections between them. Provided with a list of phonemes Netalk read through pages of text, teaching itself the complex associations between the phonemes and the letters on the page until it could correctly pronounce over ninety percent of the letters. Expert systems exist to perform the same function but the effort required to define the rules is enormous. Given a collection of correct examples Netalk discovered the rules for itself. All of this is still very much in the development stage but the day is fast approaching when the intelligence at the disposal of mankind may not all be of natural origin. One major computer company has already announced that by the end of the year they hope to release their first commercially available neuro-computer. It is planned to be the first PC to work in the same way as a cerebral neuron-net and should only cost a few thousand pounds. Over forty-years of research has at last started to show a potentially useful return.

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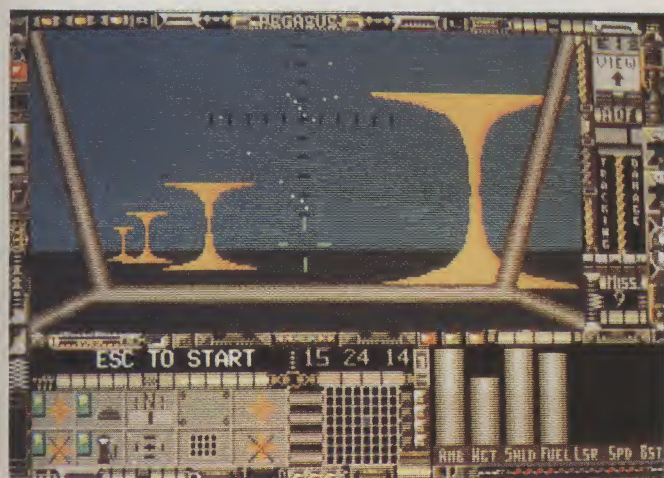


PHANTASM

Exocet

From its name and cover artwork depicting a pouting female set against a background of space battle, I was expecting something very different from Phantasm. In fact, the sexy woman on the cover has no relevance to the game at all.

Instead of thinking up a scenario for the game, they have taken another way out by saying that the whole thing is just a fantasy. Obviously the imaginations of the designers are like the Spanish philosopher who claimed 'Life is a dream' — the word 'fantasm' seems to be on every pop song writer's lips these days. An instruction sheet labels most of the gauges and gives a brief explanation of your task.



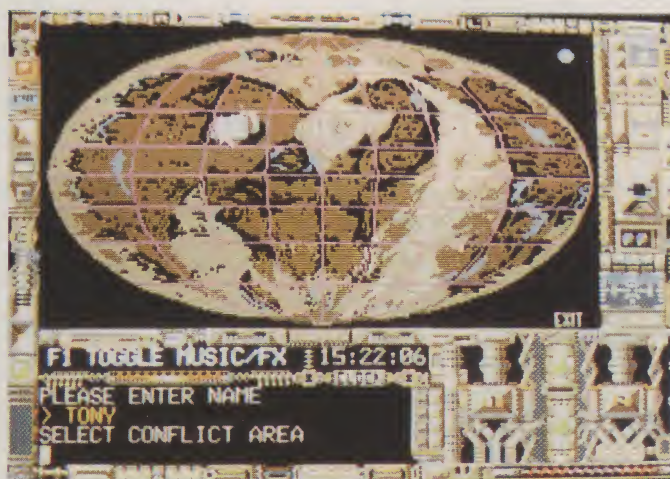
You have found yourself on a moon inhabited by an aggressive race that shoot to kill. Sprinkled throughout 64 sectors of the moon are 8 re-constitutions, all of which must be found and destroyed. Select which sector to start on from the map and beam down. From here on, Phantasm looks and feels very similar to CRL's Tau Ceti but

'A radar is positioned at the top of the screen, showing the positions of monuments (chunks of rock), aliens, beacons and any other visible objects'

with Amiga's advantages. A radar is positioned at the top of the screen, showing the positions of monuments (chunks of rock), aliens, beacons and any other visible objects. All are shaded on one side to give the effect of low sunlight.

Flying saucers glide around taking shots at you with their lasers. Your lasers can be used to zap

them back, or if you run into a group of them, the speed booster will be your best form of escape. Most of the scenery is somewhat basic and lacks special interest, except the alien ships. First impressions lead you to think there is a lot to Phantasm, but once you know what you are doing you realise it is really very simple. It seems to be trying to imitate Tau Ceti but turns out more like Novagen's Backlash. However, not too much of Backlash's lightning speed or graphic detail are present, though it does have a substantial challenging factor. What you are left with is in reality is a 3D shoot 'em up which many will like. A passable but unremarkable piece of music can be switched off during the game for a few



blippy effects.

The thought of searching the 64 sectors for a mere 8 re-constitutions is enough to put me to sleep (but then I have difficulty keeping awake these days for anything! So I can't blame 'Phantasm'!) What the game needs is a little more real action. The programmers were obviously trying for something special but have really not driven their own imagination far enough to justify the use of the word 'fantasy', which suggests something more exciting than has been delivered here.

B.V.

Graphics: 5
Sound: 6
Playability: 4
Value: 4
Price: £24.95

One of the most popular games with the visitors to the recent Commodore show was Discovery's Zoom: a simple game in concept which combines two early arcade games with a few agreeably original features.

A weird opening sequence precedes the game. A bunch of Pacmen strut around a stage performing tricks and generally having a terrifically amusing time. All this is accompanied by sampled cheers and hoots from the audience and a fittingly strange tune. At the Show, people watched fascinated for ages. When you have had enough of that you can load up Zoom!

There are three modes to choose from: one player, two player and two player competition. Two player mode has the players alternating turns in the usual way. Competition mode puts both into the game at once. Your on-screen hero is a small ball, not unlike our old

friend Pacman but bouncier. Instead of eating dots, he has to fill in every square on the current grid by drawing trails around them. Anyone familiar with

Amidar or Potty Painter will be instantly at home and thoroughly enjoying him or herself. For this is certainly a game that will appeal across the sexes – and to judge again from the Commodore Show, across the age groups too.

"This is certainly a game that will appeal across the sexes – and to judge again from the Commodore Show, across the age groups too"

Floating around the grid are a selection of nasties to be carefully avoided. The merest brush with an alien causes 'Pac'



Z

to pop immediately, losing a life. There is a whole series of bonuses that, when they appear, give you extra points, help by freezing the aliens, make it possible to advance levels and so on. Your best and most effective defence against the aliens is to knock a small hole in the grid, giving time for you to make a getaway. Unlike the original painter game, Zoom is played in 3D, not a feature that alters the gameplay but it makes an extremely pleasant change and enlivens the whole look Zoom!

To spruce up the game, some very attractive graphic and sound effects have been included. The whole thing sounds very sophisticated due to its very well



a square without it filling in. Strange.

In a similar style to Arkanoid, Discovery's last game, Zoom is really a souped-up version of an established game design, and none the worse for that. It has a quality, present in Arkanoid, that can draw you back time after time, as evidenced by the way it magnetised the players to return whenever it was up on our Amiga stand at the Commodore Show. The most unlikely shoot-'em-up fans clearly felt its alternative challenge.



DOOM

Graphics: 7
Sound: 8
Playability: 7
Value: 7
Price: £19.95

sampled effects and synth music, most of which is exceptionally expertly created. One odd aspect that crops up now and again is the way you can totally surround

I can see that Zoom will be popular with anyone who likes the classic games. It undeniably has that magic addictiveness that those games possess. Zoom is a very good example of its type, so give it a go if you like the sound of it. Recommended.

B.V.

Yet another graphic word-processor is launched. Peter Lee offers some views – kind and otherwise – on this interesting newcomer.

Some software houses aim for the moon – and miss. Others confine their range to more down-to-earth proportions. KindWords, I am happy to say, falls into the latter category. It is a graphic word-processor from The Disc Company which aims to complete in the same marketplace as a number of very similar products, ProWrite and VizaWrite are probably the best known and do contain more features and there is Excellence to come. But despite its mid-range price, KindWords is a stylish and uncluttered tool and one with which I felt instantly at ease. Simple and elegant, while it has its bad points, it also has a lot going for it. Ease of use for starters and fewer of the over-rated additions of the more up-market competition.

As far as I could see there is no easy way of importing other fonts into an active document. You get what you are

'If you need to amend a word, the program uses the correct font automatically'

given, so KindWords makes few pretensions at desktop publishing. As I said earlier, it has aimed at a smaller target than its rivals – and in my opinion hit the bullseye. Where scores over is in the friendly way graphics can be imported into documents. It will try to accommodate up to 16 colours if you ask it, working with art screens, typically

dumping to the printer. Users with colour printers have the luxury of multi-coloured fonts as well as multi-coloured images.

Once loaded, graphics can be edited in a number of interesting ways. Unfortunately the old problem of not being allowed to flow text alongside an image rears its head again. I do not consider any graphic word-processor which prevents text being written alongside an illustration to be wholly adequate. It is like buying a car without a reverse gear. Pet moan over – and to be more positive, the graphic manipulation works well; once the image (possibly a paint 'brush' or even full-screen image) is imported into the document, clicking on it displays a line box surrounding it. There are eight selection points on the outline which allow you to crop unwanted portions of the artwork, move it along the width of the line and, more impressively, to re-size it.

This can be done manually, or proportionately by pressing the shift key at the same time as the box is edited, giving equal horizontal and vertical movement. Converting the image resolution and colours after loading can take upwards of a minute and if you manage to deform it out of all recognition, you may have to

KIND

KindWords comes on two unprotected disks – one for the program, the other containing a 90,000 word dictionary and a small selection of special fonts, which are a major advantage. Because instead of sitting idly by and taking advantage of the standard Amiga fonts, the programmers have designed a new high-quality style which has been customised to allow even the humblest dot matrix printer to dump text in something approaching near letter quality. The range is limited and has to be specially loaded from disk before printing, but the output is very good. A lot of thought has gone into the characters' design and the finished article reproduced well on my Epson RX and would probably do better on more sophisticated printers. But the dump is very, very slow: we are talking real snail's pace here... Apart from super and sub-script variations, there is unfortunately only one face of this so-called SuperFont – Roman – and it comes in 8, 12 and 14 pt sizes. But there is an additional bonus in being able, at the click of a menu item, to have graphic border characters under keys, together with foreign accents and odd characters – things such as musical notation, arrows and copyright symbols.

DuluxePaint, in medium or low resolution; high resolution pictures may be loaded but they will be automatically reduced to med res. The program display is always in this resolution (640x200 pixels), which gives a clear and sharp work area, allowing for good image

load it again. As always, chip memory is in big demand, so although the program will work on any Amiga with a minimum 512K, at least 1 meg is needed to reach full potential.

I encountered a problem, though, when I loaded in a 16 colour digitised

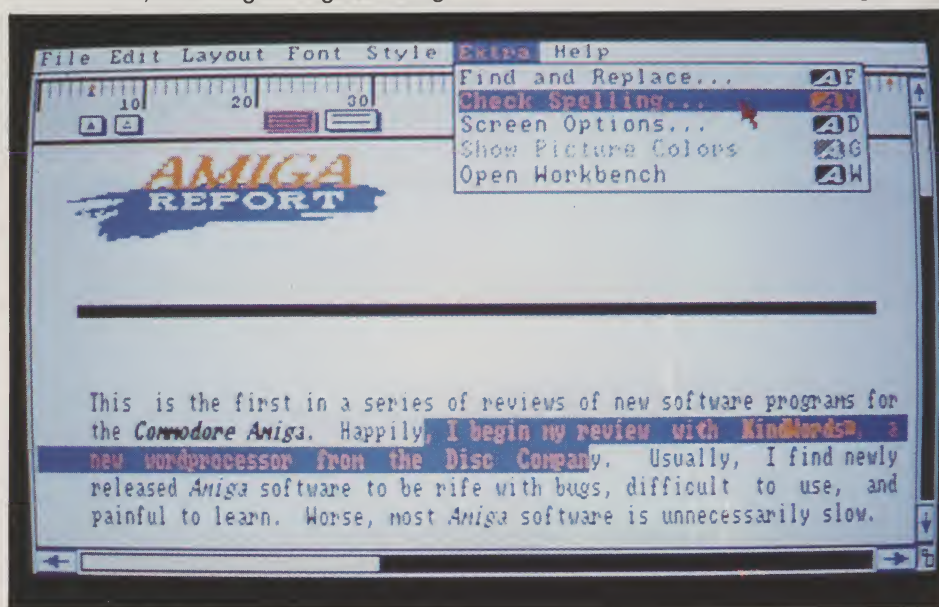


image. It was displayed perfectly but some portions printed out white when they should have been dark. It would seem that KindWords sees the second palette colour as transparent. Once aware of this I was able to modify the pictures so as not to use this colour. When suitably modified the printed images were some of the most pleasing dumps I had ever seen.

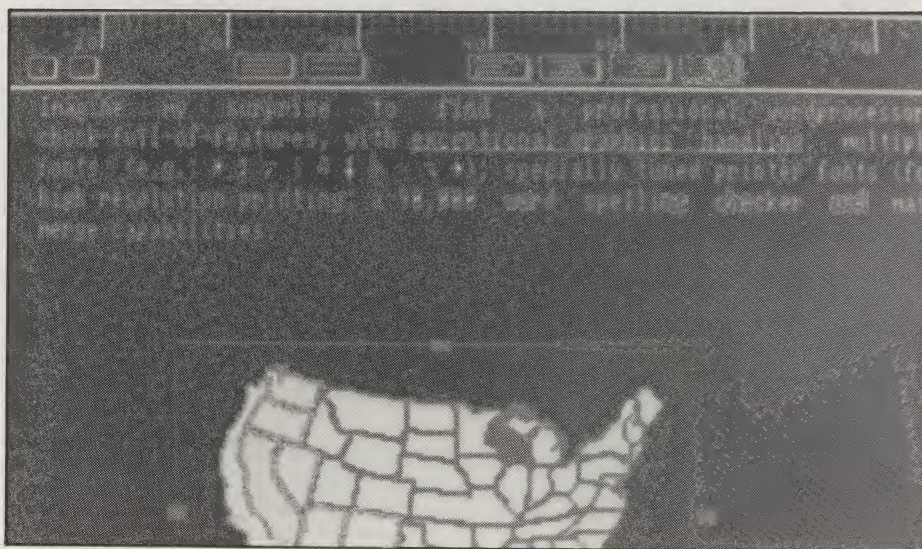
Inserting and editing text is simple and the mouse cursor can be used to define whole batches of text for possible cutting, copying or moving. In this way different fonts for an already written segment can be chosen after the text is highlighted. If you need to amend a word, the program uses the correct font automatically.

Above the by-now common graphic display of page format icons which all similar programs have, KindWords displays its ruler on which icons can be slid to control margins, tabs and paragraph indents. There is also a helpful short-cut ruler format requestor box in which you can enter numerically all the document's parameters. All this information is subsequently saved along with your document, though you can specify a simple ASCII file save, which leaves out the graphics

push the mouse around.

KindWords holds it own in the field of document attributes – allowing headers and footers, insertion of current date and time and giving a visual display of tabs and page-breaks if needed. Search and replace is well controlled from a window and, provided you have sufficient memory, the dictionary can be loaded into

– everything about it shows consideration for the user. It does not claim to revolutionise the DTP market nor set the business community alight. It lays its stall out as a perfectly reasonable work tool and comes up with the goods. On the minus side, like most of its competitors, it takes the easy way out by not allowing text alongside artwork. However, it does



WORDS

and saves raw text.

Attention to detail, evident in the fonts, is also apparent in the care given to printer drivers. At last programmers have realised that simply because Commodore put things on the Workbench disk, it does not mean they are beyond improvement. So KindWords have designed their own custom-drivers for a selection of supported printers – CBM_MPS 1000, Epson (standard and 24 pin and the JX-80), Imagewriter and Okimate_20. All other Preferences printers are still supported except for Diablo C-150, HP Laserjet and Okidata 92 and 292 and, in addition, there are 11 non-Preferences printers accommodated with specialist drivers available from addresses listed in the manual. I can only speak for the Epson dump, which was quite outstanding, even by Amiga proportions.

Also very friendly is the program's help function which features a quick reminder of the icon functions and a more explicit facility which displays the many keyboard shortcuts which help you move your work along at a good pace. In fact it appears every menu option is echoed by a keyboard command, so you need not take your busy fingers off the keys to

RAM to speed up operations. A user-definable supplementary dictionary list is also available for 'learnt' words and this can be edited from within the program provided you keep your words in alphabetical order and you save it as ASCII. If the checker throws up an unknown word, among several options is a suggestions box which will bring up a number of words which the unknown one may possibly be.

Finally, the program also boasts a mail merge utility for sending multiple copies of the same document to different people, whose names, addresses and so on are retrieved automatically from a master list in database fashion. Creating this list is slightly cumbersome in that specific rules have to be followed – for instance you cannot simply write a comma, you must press the return key simultaneously with the comma key. But for all that, the small amount of time needed to create a merge list will be worth it if it saves you having to write different addresses over and over again. Grin and bear it really – it will save you time in the long term.

CONCLUSION

KindWords is a program written with care

compensate by having super custom drivers and specialised fonts for some printers – but having only one typeface means, it is graphic word-processing at

'The small amount of time needed to create a merge list will be worth it if it saves you having to write different addresses over and over again'

its bearest. If you have your mind set on a graphic word-processor and can live with the shortcomings, have a look at this one. It may not be as powerful as some but it is friendlier than most and works its heart out.

P.L.

Price: £49.00

Contact: Amiga Centre Scotland, 4 Hart Street Lane, Edinburgh EH1 3RN. Tel: (031) 557 4242.

SHELL & TOOLKIT

Metacomco, creators of AmigaDos, are also well known for their Amiga utilities. Bill Donald re-examines two of their older but still popular packages

METACOMCO SHELL

I last reviewed the Metacomco SHELL in the February 1987 issue of *AUI* and the new release of this product prompted me for a fresh look. A 'shell' in this context really means an environment or interface to the user. The AMIGA has two basic environments for the user – the CLI and the WORKBENCH. The Metacomco SHELL is designed for use in the CLI.

Running SHELL causes the appearance of a conventional CLI with the exception that the top left-hand corner displays the current directory. By default, this always starts in the root directory of df0: and apparently cannot be changed by the user.

The commands provided by SHELL are:

Alias	CD
Equ	Esc
Help	History
Key	Nonres
Path	Pop
Push	Resident
Set	

Some of these commands are duplicates of v1.2 AmigaDOS – for example PATH and CD. In addition, the Metacomco SHELL provides direct editing of a command line.

Probably the most useful feature of SHELL is the ability to customise this to the individual system. When SHELL is first called, the software looks on drive df0: for a file named ".PROFILE". This is an ASCII file which can contain a series of commands from SHELL. For example, the file listed below is my own personal ".PROFILE" batch file.

```
History 50
alias hi History
alias ec EndCLI
alias run c:ShellRun
alias EndCLI C:Endhsell
alias ass Assign
alias av Avail
alias cp Copy
alias cx CXRef
alias da Date
alias dc DirCmp
alias de Delete
alias di Diff3
alias ex Execute
```

```
alias fmt Format
alias gr Grep
alias inf Info
alias li List
alias ls Dir
alias mk MakeDir
alias nc Shell
alias rb Reboot
alias ren Rename
alias sdb Metascope
alias st Stack
alias ss Status
alias ver Version
key 1 dir
key 2 li m
key 3 cp
key 4 del
key 5 #?#
key 6 md
key 7 ren
key 8 cd/\m
key 9 run wp\m
key 10 dir\m
path dh0:applications/wp/
prompt "%N%N>"
cd ram:
```

The first line contains the HISTORY command. This allows you to recall previous command lines by pressing the <cursor up> key. The numeric parameter defines how far you can go back to earlier command line sequences. The following 24 lines use the ALIAS function. This should be self-explanatory and permits the redefinition of the command lines which I use most often. Ah ha, you cry – why not use the AmigaDOS RENAME command? The answer is you cannot rename files assigned by the system or yourself. Even ASSIGN cannot be RENAMED – try it if you do not believe me. However, ALIAS allows you to do this and consequently cut down on your keyboard strokes. Once the files have been given aliases, the alias names may be used in further batch command files.

The next 10 lines demonstrate the use of the function keys from the CLI. Note how I have started using aliases – I am a great believer in cutting down my typing! Those lines which are terminated with the characters <\ m> have a special purpose. This character sequence (CTRL-M) informs AmigaDOS to append a carriage return.

The PATH line means that I can call up WordPerfect from any CLI irrespective of my current directory. Useful when I want to quickly look into a file. The PROMPT line gives me a CLI prompt which looks like this:

1.43>

The first number informs of the CLI number. Thus, if I spawn a new CLI then the prompt on the window will look like this:

2.1>

This example also conveniently explains the function of the second number to the right-hand side of the period. This is the total number of previous command executed from this particular CLI.

An extension of ALIAS is the SET and EQU commands. These permit the use of variables within your command line. The drawback to ALIAS is that it must be the first component on the command line. Using SET allows the placement of an aliased sequence anywhere on the command line. EQU allows you to incorporate an alias that was defined using SET into a new definition. This means that very long command line sequences can be considerably shortened. For example, consider where we keep our letters in directory "dh0:applications/wp/letters". The command line:

```
equ let push dh0:applications/wp/letters
$let
```

will take us into this directory and save the directory we have just left. Note the use of the dollar (\$) sign to prefix the alias and PUSH which is explained below. The ESC command allows you to change the dollar (\$) sign for SET and EQU to another keyboard character. I usually change this from "\$" to the equals (=) sign, since the dollar character means pressing the shift to access it. I told you I was always on the look out for shortening key strokes!

POP and PUSH are very useful for jumping from directories. For example, you are in a directory named "wombat" on your hard disk and you want to move to drive of df2: into the directory named "foo".

```
push dh2:foo
```


Project D disc copier

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SHELL & TOOLKIT

will take you there but SHELL will also remember the name of the directory you came from. Thus to return to directory "dh0:wombat" you would enter:

pop

PUSH and POP utilise a stack mechanism whereby each visited directory be saved. By prefixing your command with PUSH rather than CD you can invoke this feature quite readily. Alternatively, you could always ALIAS the CD command to PUSH to save yourself the problem of remembering.

SHELL is supplied with a 106 page indexed manual. The usual terse house-style of Metacomco documentation is to the fore and the chosen examples are not particularly inspiring. My only complaint about this product was that resizing the CLI clears the screen and moves the cursor to the home position. This destroys the window contents and can be extremely tedious if you are just increasing the length of the window.

METACOMCO TOOLKIT

This is a companion to the Metacomco SHELL and once more is CLI-orientated software. The primary difference between TOOLKIT and SHELL is that the latter is purely a collection of new or enhanced AmigaDOS commands. In contrast, TOOLKIT provides a collection of both AmigaDOS commands and programming utilities. Thus the two products are complementary to each other and can be used independently.

The AmigaDOS commands provided by TOOLKIT are:

Alib	Browse	Disasm
Enlarge	Make	Mount
Pack	Touch	Unpack

The utilities provided by TOOLKIT are:
Pipes Aux CLI

Some of these commands are used in conjunction with each other, so I will describe their usage accordingly. The first two are PACK and UNPACK. These will compress an ASCII text file up to 30% of the original file size. There is a cost overhead of 1K per file using PACK and the documentation recommends that the file size should be a minimum of 2K to be a worthwhile candidate for compression. I tested PACK on a file of 94K and this was reduced to 51K, thus giving the figures supplied by Metacomco some credence. The only drawbacks to using PACK and UNPACK was that I did have an occasional failure to correctly decompress a file. Although the fault lay in one of the commands, it was impossible to discover which one. The other problem with these two is that they do require a

large workspace in RAM, the default being a rather exorbitant 100K. Be careful when running tight on memory resources, you could end up with a mangled file.

The ENLARGE command is used to translate text strings into large characters for display at the CLI. I could not think of any obvious uses, other than to display rather crude warning messages when executing batch command files. I guess they just threw this one in to make up the numbers.

BROWSE is a more useful command since it allows you to skim through the contents of an ASCII text file. There is a certain amount of context searching available. However, you cannot perform any replacement of text. The basic display is screen-orientated and is quite slow. For example: BLITZ, which is available from the public domain, demonstrates how to utilise the Blitter and page through a document extremely quickly.

ALIB and DISASM are also very useful and should be a part of every programmer's armoury. The former is used to extract or amend an Amiga library. Obviously some detailed knowledge of the system software and its structures is needed in order to gain full advantage of ALIB. By contrast, DISASM is something that most programmers will be able to explore very quickly. This command will disassemble an AmigaDOS executable or object file into an ASCII text file. In common with PACK and UNPACK, this command also demands a large workspace. In this case it is a very extravagant 200K. Note that these figures are the default size and thus can be reduced. However, I tend to think that if these commands are defaulted to such large values, something seems a little wrong in the original code and a little optimisation would not go amiss.

The output from DISASM does not include labels or other symbolic information – it is divided into either code or data sections, thus limiting its usefulness.

MOUNT allows you to "mount" a device onto your system. In other words make it recognisable to AmigaDOS. The command takes its instructions from an ASCII text file named "mountlist" which contains details of the device itself. Unfortunately, the supplied "mountlist" file was incorrect and I checked with an earlier version of the TOOLKIT and it seems the error has been repeated. The fault lies in the definition for a 5.25-inch drive. The flag parameter should read 1 and not 0. A slapped wrist to Metacomco for not spotting and correcting this mistake.

MOUNT is also used for the two supplied devices, namely PIPE and AUX-CLI. Happily, these do function cor-

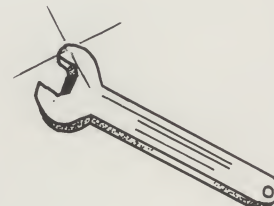
rectly and many users will find the PIPE device very useful. Pipes are a concept which are heavily used in UNIX to communicate I/O between tasks. The pipe is only in existence for the duration of the data transfer which mean that you do not have to specifically create files. Most books on UNIX programming give many examples of how to use pipes. AUX-CLI is a console-handler which is similar to but not the same as, the CON: device. In the case of AUX-CLI the I/O is sent to the serial port rather than to the screen. Theoretically useful for remote debugging from another machine, but the whole idea is based on the assumption that the serial port is still functional – during a bad system crash this seems unlikely.

MAKE and TOUCH are two further UNIX utilities grafted onto AmigaDOS and should prove their worthiness to heavy-duty programming projects. In essence, the idea of MAKE is to keep track of files which have been modified through the medium of the file date stamp. MAKE provides a quasi-macro language and set of rules while TOUCH performs the actual date stamping. We hope to have an article on MAKE and its uses in a later issue of AUI.

The Metacomco TOOLKIT is useful but has failed to keep pace with what is available in the market. In some cases, the public domain offers users a good choice of programming tools. For example, the equivalents of BROWSE, DISASM, MAKE and PACK can be found on the FISH disks. My suggestions to Metacomco to stand off this competition would be as follows:

Use the Blitter for BROWSE. DISASM should disassemble 68010 and 68020 code. An intuition front-end on MAKE for beginners. A more effective compression algorithm and more options for PACK. Combine TOOLKIT and SHELL as one product.

B.D.



Prices: SHELL £49.95 – TOOLKIT £39.95

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Top Down

Now this is what I call an action game! In essence, *Vyper* is really a souped up new version of that all time classic, *Galaxians* but what it lacks in originality, it more than makes up for with excellent animation, superb sound and a variety that knocks spots off most other Amiga games.

A one or two player game, *Vyper* offers no less than 25 different alien types (the Yarks) coming at you in 100 varying waves. One of the joys of this game is that you can elect to start with any of the first 80 waves. Progress beyond the 80th swarm can only be accomplished by your own skills.

You start with three *Vyper* space fighters: once they are wiped out, the game is over. A bonus *Vyper* is awarded for every third wave that you survive. Your ship can only move left and right along the bottom of the screen and its sole weaponry is a single-shot cannon. Control is by joystick or keyboard.

An initial options screen shows you all the Yarks in glorious animation (but not their full range of colours – you will see those when you start fighting) and lets you select your starting wave, have a one or two player game or view the high-score board (the top 80 players). In a two player game, each player



takes it in turn to control a *Vyper* – there is no simultaneous play. Do nothing at the options screen and the game will eventually take off into a demo mode, just to let you see what you are up against.

The game is played against a black background liberally sprinkled with multi coloured stars that swirl softly and swoosh down the screen. Over to the right of the display, a panel supplies such information as wave number, score, ships remaining and a handy reminder of the pause, toggle sound and quit wave commands.

Each wave of aliens swoops on to the scene in a different manner and varied firing formation – and by heavens, do these fellas move! On some of the waves, you will barely believe your eyes at the speed

of the Yarks as they swarm onto the screen to take up their initial attack positions.

The animation is the slicked I have ever seen on a game for the Amiga (the screen is updated 60 times a second) and the detail of the aliens is immaculate. The foes dip and dive, swoop and swirl in all manner and variety of clusters and positions – the effect in almost every case is thrilling and



stunning. Sometimes the screen is so teeming with life and movement that it is all too tempting just to sit back and feast your eyes as the Yarks rain down their red-tipped bombs and blow your ship to smithereens!

“The foes dip and dive, swoop and swirl in all manner and variety of clusters and positions – the effect in almost every case is thrilling and stunning”

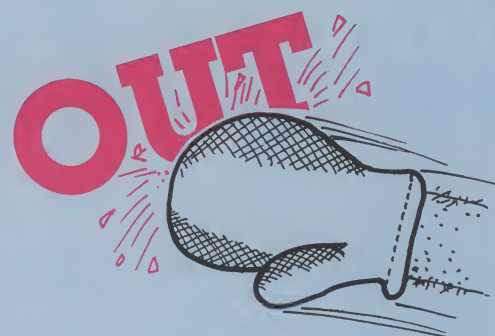
And that is not all. As well as being graphically brilliant, *Vyper* also comes out tops in the sound department, too. There is no music but there are bags of stereo sound effects, all first class and adding superbly to the already exciting atmosphere. Hook your Amiga up to a stereo system for the best effect.

Vyper is brilliant and totally addictive. It may not have the most novel gameplay but, by golly, it comes up trumps in every other sphere. If you want great sound, brilliant animation, fast and furious action and a game that thoughtfully gives you the option to tackle almost any part of it in any order you wish, regardless of skill, then *Vyper* has got the lot. All gamers should have at least one top notch shoot-'em-up in their collection and for Amiga owners there can be no doubt what game that should be – *Vyper*. Go get it and get blasting!

B.C.

Graphics: 9
Sound: 9
Playability: 10
Value: 10
Price: £19.95

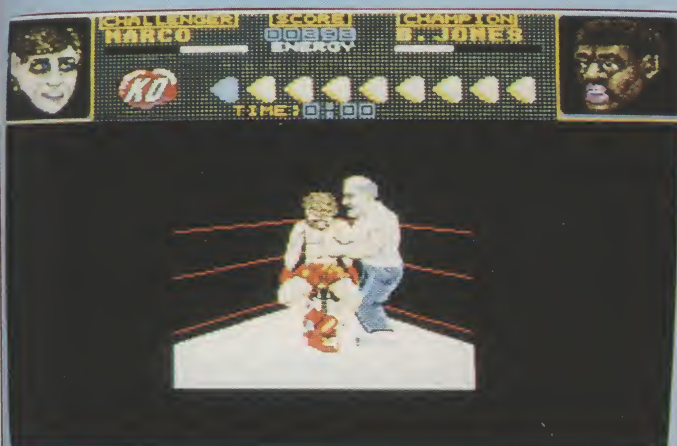
SECONDS



Tynesoft

Once again, Tynesoft take us for a trip down Memory Lane with *Seconds Out*, another of those games that were so popular a few years ago. This time the source is *Punch Out*, a coin-op that was the inspiration for Frank Bruno's *Boxing* and *Rocky*, a couple of hits from a few years back.

You are Marco, a clean fighting boxer bearing a strange resemblance to Spike Milligan. Five opponents lie between you and the championship, each one harder than the last. You have a limited range of punches available, by raising or lowering your guard you can switch between head and body blows. Most of the game is spent pounding your opponent until the knockout icon flashes. This means your opponent is stunned enough for you to use the slow but powerful right hook to finish him off. Hit him with the hook enough times and he will go down, and with any luck will stay there.



Your fight is viewed from over your shoulders. So as not to obscure the other boxer, you are seen as a transparent wire-frame with a solid head and gloves. Although this works better than a solid body would, it still leaves you guessing as to what your opponent is doing, a problem made worse by the few frames of animation. Apart from Joe Weed, the

"Wagging the stick massages your shoulders and perks you up with smelling salts and a drink"

first competitor, each boxer has a speciality move. These are not particularly entertaining but at least give the fighters their own characteristics.

Between rounds you take control of your trainer. Wagging the stick massages your shoulders and

perks you up with smelling salts and a drink.

Even though the Amiga is quite capable of faithfully emulating (if not surpassing) *Punch Out*'s graphics, those of *Seconds Out* are a lot worse. The characters have been poorly drawn and shaded,



looking very blocky in places. There are very few sound effects to be heard, just a couple of bliffs and the clang of the bell.

A problem that occurs frequently with boxing simulations is the limited range of moves. Just using the left or right body and head punches gives the fights a very repetitive nature. I found *Seconds Out* had little to entertain me, mainly because there is nothing particularly new on offer. Others may find its simple gameplay and humorous approach more appealing, though experienced gamers will demand greater involvement.

T.H.

Graphics: 5
Sound: 5
Playability: 5
Value: 5
Price: £19.95

GETTYSBURG: THE TURNING POINT SSI

On July 1st 1863, the Battle of Gettysburg began as little more than a minor skirmish. Two Union cavalry brigades who were checking enemy movements encountered a handful of Confederate infantry brigades who were looking for shoes at Gettysburg. By July 3rd, the battle had grown to monumental proportions, involving 90,000 Union soldiers against some 70,000 Confederate troops. In those fateful three days, around 50,000 Americans were killed.

Gettysburg: The Turning Point is the latest grand-tactical war game from Strategic Simulations Inc and concerns the most famous battle of the American Civil War. Using a refined version of their critically acclaimed system, SSI allow you to recreate this three day battle in 42 turns.

The game can be played by one or two players. In a one player game, the computer will take control of the other side – you can even let it control both sides if you simply wish to sit back and watch.

There are three game-style levels – basic, intermediate and advanced – and four scenarios – campaign game, first, second and third day scenario – to choose from. Other options include the hiding of unsighted units, setting a time limit, five difficulty levels and variable reinforcement arrivals.

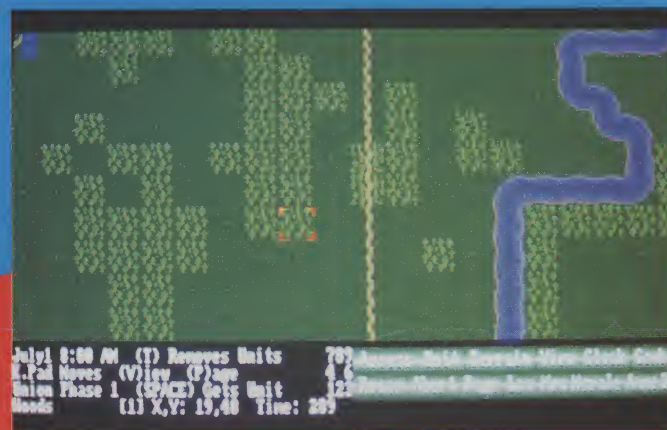
Gettysburg is played out over a large, terrain-detailed, scrolling map. Unfortunately, the scrolling is still the usual jerky, flick-row sort employed by SSI – I wonder when they are going to catch up with the smooth-scrolling techniques that most other professional software houses use for the Amiga? Few spot sound effects are used – sampled explosions only, so far as I could tell.



Play follows the traditional method of dividing each game turn into phases, mainly operations and combat. In all, there are 14 separate phases in the intermediate and advanced levels of Gettysburg and include command control, recovery/rally and

reinforcement phases.

Icons or bars may be used to represent the forces although icons are better as they show facing and mode (for example, cavalry – an optional extra that may not be historically accurate but makes for a more interesting game – may be mounted or dismounted). During each turn, the choices available to the player are presented by a myriad of labelled option 'buttons' which are operated by use of the mouse. In this respect, the game is very well designed and presented although it can be rather daunting at first encounter, so numerous are the choices and detail provided in this program.



When you access one of your units, you will be presented with a mass of information about that unit, including its name, number of men, morale rating, facing direction, co-ordinates of square occupied, whether plotted for melee, if and where firing and much more besides! You will certainly need to keep referencing the excellent large-paged manual that comes with the game until you have played a few times.

Gettysburg is probably the most detailed and involved strategy game that SSI have produced. For instance, combat is resolved right down to every individual soldier and the advanced game has some pretty intricate rules that will test the strategic skills of the most dedicated of wargamers. However, Gettysburg can be played at a basic level and is so brilliantly designed that even those new to strategy games should get to grips with it quickly.

This has to be one of SSI's best games yet. The wealth of options and well-designed player interface fronting the depth of detail, potential complexity and simulated realism make this a game that will challenge all grand-tactical gamers.

B.C.

Graphics: 7
Sound: 3
Playability: 8
Value: 8
Price: £24.99

QUAD

Finding gadgets less than intuitive? Giulio Zicchi puts you on the right track.

This month we are going to take a brief look at gadgets on the Amiga. Gadgets are the input devices used to communicate with an Intuition based application.

Most screens and many more windows will have gadgets attached to them – the depth arranging gadgets, for instance, or the window sizing gadget in the bottom right corner of most windows. These are the system gadgets which Intuition handles automatically. In addition to the system gadgets, we can set up structures within our program to provide further gadgets for our own input. Intuition currently supports four basic gadget types –

Boolean gadgets – are mainly used to gather yes/no or true/false selections.

Proportional gadgets – are used to get or display proportional information from/to an application.

String gadgets – are used to obtain a string of text from the user.

Integer gadgets – are similar to string gadgets but allow only integer values to be entered.

A certain amount of effort is required from the programmer before any of the above can be implemented, since they all require further structures to be set up in memory. However, the flexibility offered

by them more than compensates for the niggly process of inserting the correct values in a few structures, as you will see.

This month's example sets up a proportional gadget in a window on the workbench screen and prints the current value in a hex number to the right of the gadget. I have kept the example as short as possible to prevent 'typingophobia' but it should illustrate the principles involved and give you incentive to develop further uses for these very flexible devices.

Turning now to the listing, you will notice that the window structure contains a **GADGETUP** flag in the **IDCMP** field and a pointer to the head of a gadget list, which in this case consists of one gadget.

The comments within the listing should help but more detailed information is to be found in the official Intuition manual. A proportional gadget has to have a structure attached called a **PropInfo** structure which holds further information regarding the range of values represented and along which axis the sliding part of the gadget may move.

The **PropInfo** flags in the example are set to **AUTOKNOB**, which says to Intuition, 'You provide the imagery for the sliding knob' and **FREEHORIZ** which

allows the slider to be moved along the X axis. The vertical pot and body values are set to -1 since they are not applicable here. The horizontal pot value is set to 0 which will cause the slider to appear to the far left when the gadget first appears and the horizontal body value is set to \$FFFF/32. This is just a convenient way of letting the assembler calculate the correct range of values represented by the gadget which is, in this case 0 – 31. The **HPotRes** variable is the value divided into the pot variable to obtain the current value of the gadget and is maintained by Intuition. All we, as the programmers, have to do is to monitor the values and take the appropriate action. The number display is presented in hex simply because it is easier than calculating decimal (cop out!!) and so I will leave that as an exercise for you to do. Also, try changing the body value and watch the displayed value change accordingly. That's all for this month – have fun with gadgets!

G.Z.

All of the 68000 assembly language articles in this series were written using the Devpac Amiga assembler from HiSoft. Consult your assembler manual to reconcile any differences.

```

OPT      C-, D+
INCDIR   "SYS:INCLUDE/"
INCLUDE  INTUITION/INTUITION.I
INCLUDE  INTUITION/INTUITION_LIB.I
INCLUDE  GRAPHICS/GRAPHICS_LIB.I
INCLUDE  EXEC/EXEC_LIB.I

NULL     EQU      0

LEA      INTLIB, A1                      ; pointer to string
MOVEQ    #$00, D0
CALLEXEC                                OPENLIBRARY      ; attempt to open library
TST      D0                             ; successful ?
BEQ      ERROR                          ; nope....
MOVE.L   D0, _INTUITIONBASE             ; else store lib pointer
LEA      GFXLIB, A1                     ; same for graphics lib.
MOVEQ    #$00, D0
CALLEXEC                                OPENLIBRARY
TST      D0
BEQ      ERROR
MOVE.L   D0, _GFXBASE                   ; store lib pointer

```


QUAD

```

LEA     NEW_WINDOW,A0           ; pointer to our window
CALLINT OPENWINDOW
TST     D0                      ; window open ok ?
BEQ     ERROR                  ; no - exit
MOVE.L  D0,WDW_PTR             ; else store pointer
MOVE.L  D0,A0                  ; get rastport pointer
MOVE.L  WD_RPORT(A0),RASTPORT  ; and store

LOOP    MOVE.L  WDW_PTR,A0      ; main program loop
        MOVE.L  WD_USERPORT(A0),A0 ; get user port
        MOVE.B  MP_SIGBIT(A0),D1 ; and obtain signal bit
        MOVEQ   #$00,D0
        BSET    D1,D0          ; set signal bit
        CALLEXEC WAIT          ; and sleep...
        MOVE.L  WDW_PTR,A0      ; until message arrives
        MOVE.L  WD_USERPORT(A0),A0 ; then get message
        CALLEXEC GETMSG
        TST.L   D0              ; D0 should ALWAYS hold
        BEQ     LOOP            ; pointer but check

anyway  MOVE.L  D0,A1           ; to A1 for
        CALLEXEC REPLYMSG      ; reply to message
        MOVE.L  (A0),A0        ; retrieve message ptr.
        MOVE.L  IM_CLASS(A0),D0 ; determine message type
        CMP.L   #CLOSEWINDOW,D0 ; close gadget clicked ?
        BEQ     KILL_EVERYTHING ; yes - close window
        CMP.L   #GADGETUP,D0   ; gadget hit ?
        BEQ     DO_GADGSTUFF    ; yes - do subroutine
        BRA     LOOP            ; else loop

DO_GADGSTUFF
gadget  MOVE.L  IM_IADDRESS(A0),A0 ; get address of hit

        MOVE.L  GG_SPECIALINFO(A0),A0 ; get proportional
structure
        MOVE.W  PI_HORIZPOT(A0),D1 ; these two variables
        MOVE.W  PI_HPOTRES(A0),D0 ; divided give current
        DIVU    D0,D1             ; numerical position

        MOVE.B  D1,D0           ; so we now need
        BSR     DO_HEX          ; to convert the
        MOVE.B  D0,HEX_STRING+3 ; bottom four nybbles
        LSR.W   #4,D1           ; of D1 into ASCII
        MOVE.B  D1,D0           ; for the text routine
        BSR     DO_HEX
        MOVE.B  D0,HEX_STRING+2
        LSR.W   #4,D1
        MOVE.B  D1,D0
        BSR     DO_HEX
        MOVE.B  D0,HEX_STRING+1
        LSR.W   #4,D1
        MOVE.B  D1,D0
        BSR     DO_HEX
        MOVE.B  D0,HEX_STRING

        MOVE.L  RASTPORT,A1      ; rastport for gfx call
        MOVE.W  #200,D0          ; X position in window
        MOVE.W  #29,D1          ; Y position in window
        CALLGRAF MOVE           ; move draw pen

        MOVE.L  RASTPORT,A1
        LEA     HEX_STRING,A0    ; pointer to string
        MOVE.W  #$04,D0          ; number of letters
        CALLGRAF TEXT           ; write to window Rport
        BRA     LOOP            ; and loop

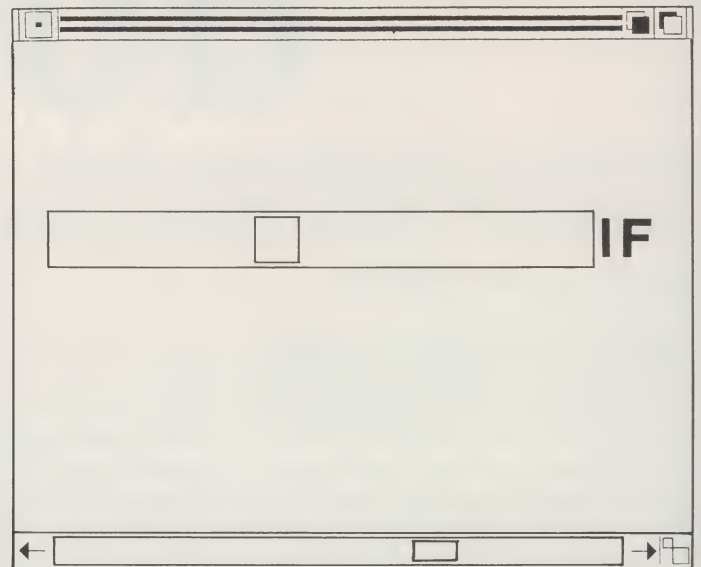
KILL_EVERYTHING
        MOVE.L  WDW_PTR,A0      ; window pointer
        CALLINT CLOSEWINDOW     ; close ...
ERROR    RTS                    ; done !

DO_HEX   ANDI.B  #$0F,D0         ; mask off nybble
        ADDI.B  #$30,D0         ; add ASCII offset
        CMP.B   #$3A,D0         ; 10 or greater ?
        BLT     HEX_DONE        ; no - branch
        ADD.B   #$07,D0         ; else add further offset
        RTS                    ; for hex letters
        ; ok

HEX_DONE
RTS

NEW_WINDOW
DC.W    0,0      ; window XY origin
DC.W    250,47   ; width, height
DC.B    0,1      ; detail and block pens
DC.L    CLOSEWINDOW+GADGETUP ; IDCMP flags
DC.L    WINDOWDRAG+WINDOWDEPTH+WINDOWCLOSE ; flags
DC.L    GADGLIST1 ; first gadget in list
DC.L    NULL     ; custom CHECKMARK imagery

```



```

DC.L    TITLE      ; window title
DC.L    NULL       ; custom screen pointer
DC.L    NULL       ; custom bitmap POINTER
DC.W    5,5        ; minimum width and height
DC.W    640,200    ; maximum width and height
DC.W    WBENCHSCREEN ; destination screen

TITLE    DC.B      'Gadgets !',0
         EVEN

GADGLIST1
GADGET1  DC.L      NULL ; next gadget
         DC.W      17,21 ; origin XY of hit box relative to window

TopLeft  DC.W      171,10 ; hit box width, height
         DC.W      NULL ; gadget flags
         DC.W      RELVERIFY ; activation flags
         DC.W      PROPGADGET ; gadget type flags
         DC.L      IMAGE1 ; gadget border or image to be rendered
         DC.L      NULL ; alternate imagery for selection
         DC.L      NULL ; first IntuiText structure
         DC.L      NULL ; gadget mutual-exclude long word
         DC.L      GADGET1$INFO ; SpecialInfo structure
         DC.W      NULL ; user-definable data
         DC.L      NULL ; pointer to user-definable data

GADGET1$INFO
DC.W      AUTOKNOB+FREEHORIZ ; PROPINFO flags
DC.W      0,-1 ;horizontal, vertical pot values
DC.W      ($FFFF/32),-1 ; horizontal, vertical body
values

The following variables are maintained by Intuition

DC.W      0 ; container width
DC.W      0 ; container height
DC.W      0 ; HPotRes - X pot increments
DC.W      0 ; VPotRes - Y pot increments
DC.W      0 ; left border
DC.W      0 ; top border

IMAGE1   DC.W      152,0 ; X,Y origin
         DC.W      11,6 ; Image width, height
         DC.W      0 ; number of bitplanes
         DC.L      NULL ; pointer to ImageData
         DC.B      $0000,$0000 ; PlanePick, PlaneOnOff
         DC.L      NULL ; next Image structure

INTLIB   DC.B      "intuition.library",0
         EVEN

GFXLIB   DC.B      "graphics.library",0
         EVEN

_INTUITIONBASE DC.L  0

_GFXBASE  DC.L  0

WDW_PTR   DC.L  0

RASTPORT  DC.L  0

HEX_STRING DC.B      "FFFF",0
         EVEN

```


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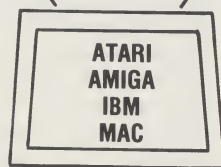


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F-BASIC

A compiler system offering an alternative to AmigaBASIC? Andy Eskelson puts it to the test.

As BASIC has emerged as the number one language for home micros, it is not surprising that there have been several attempts to improve the system. More memory and faster processors is one way to go but BASIC in its original form is inherently slow. This is NOT a fault but rather a consequence of the method of operation that BASIC uses. Stated simply it has to decode each line of commands every time it uses them, even if it has already executed the line before, such as in the body of a FOR - NEXT loop. This process is called interpretation and eats up processing time.

Interpreted BASIC has several very real advantages, the main ones are ease of use, simple editing systems, easy to debug, fast to write to name but a few. Surprisingly enough the code that BASIC produces is fairly compact but it has a major problem in that it has to have the BASIC interpreter active in order to run.

One way in which BASIC could be speeded up would be to get rid of the interpreter system and replace it with something else. One such technique is known as COMPILING and involves running a special program that converts the lines of commands into something that resembles machine-code. The resultant code is sometimes referred to as Pseudo-Code or P-Code for short. Once the program has been reduced to P-Code, a much simpler and very much faster system can be used to run the program.

F-BASIC is such a compiler system but it has a very interesting difference. Most compilers take the computer's standard BASIC as the input and compile that. This means that you can get the program running and debugged normally and then compile it to get the extra speed. F-BASIC does not use Amiga BASIC at all. It has its own BASIC dialect, which has several advantages. The programmers of the compiler can fine-tune the operation of the BASIC to be very easy and fast to compile. They can also impose strict rules as to how you can apply the functions. This means that they can produce a compiler that is very fast, especially when operated from the RAM: device.

F-BASIC claims to be the fastest BASIC compiler available, so fast in fact that it is as easy to develop programs with F-BASIC as it is with a standard BASIC interpreter. In practice I cannot dispute this at all. The compilation times are very short, a 40 line program com-

"The compilation times are very short, a 40 line program compiles in a couple of seconds."

piles in a couple of seconds. There are many functions that you would expect from F-BASIC and quite a few that you would not. The most surprising is its ability to use the library and Kernal routines of the Amiga and to be able to call machine language routines. There is also a very nice high level interface to the graphics functions, so you do not have to mess about with library calls for most of the graphics.

F-BASIC comes on two disks, one contains demos and the other the compiler. It is recommended that for program development you use the RAM: device and instructions are given as to what files you need to copy across.

The handbook is a floppy A4 spiral bound apology for a manual. It is supposed to be an easy tutorial but it is rather badly set out and can be confusing. It sometimes assumes that you know how to use F-BASIC while at the same time it tries to explain a command as if you have not come across it before. Needless to say this can become very annoying. I often found myself having to re-read sections. There is a reasonable index and a quick reference guide but again it is not very well set out and the page numbering is in the chapters/page format ie 12.31 (chapter 12 page 31). The quick reference guide gives NO information on the syntax of each command. This seems strange as including the syntax in the guide would seem the minimum requirement as the commands are complex at times and to keep hunting through the manual is irritating.

F-BASIC uses long command names, similar to those found in many of the current Amiga languages. This increases

the chances of syntax errors and are a real drag to type in. e.g COLOR PLOT nn (x,y) is the command to set a point (x,y) to the colour of colour register nn. It may make for nice readable programs but it took only two attempts to type color plot to have me swearing at the choice of name, WHY such a long name! PLOT would have been better! While on the subject of COLOR PLOT the nn parameter MUST be a number - it cannot be a variable. To set points to different colours you have to use the command COLOR PEN (f,b) to set the foreground and background colours and then use a slight variant of the COLOR PLOT command which is COLOR PLOT (x,y) to plot a point in the current foreground colour.

"how would you interpret 'Illegal Location for This Type of Declaration'?"

There is a somewhat odd restriction with the FOR-NEXT loops . . . You cannot jump out of them for any reason, even if you want to call a subroutine and then return! Linear programming may be slightly faster but I hardly think that banning the use of subroutines from within FOR-NEXT loops will be very popular with programmers. There are plenty of other loop structures, WHILE ENDWHILE; REPEAT UNTIL there are two examples. I was unable to get a double condition working with the WHILE command, ie WHILE $x < 16$ OR $y < 4$, I tried bracketting the terms etc. but nothing seemed to work. I finally resorted to a couple of IF statements and a flag to get the effect that I wanted. I was not very pleased with some of the Error messages - how would you interpret 'Illegal Location for This Type of Declaration'?? Maybe you would have a hunt through the handbook . . . well there is an index of error messages. It says (13) Illegal Location . . . etc. Not very helpful. Most of the error messages are quite straightforward but some do need to be enlarged upon.

The demo disk contains many programs. These have to be compiled before they can be executed. They are mainly graphic and maths demos. As such they

continued on page 98

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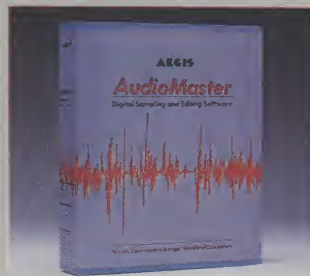
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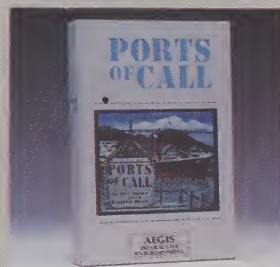
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STOCK

Stock Market is not the last word in originality — indeed, I remember writing a version of such a game in BASIC for the Commodore PET many moons ago — but it is reasonably entertaining, if expensive, fare.

The game opens with an impressive title screen (the Houses of Parliament are undoubtedly more eye-catching than the Stock Exchange building) accompanied by a short snatch of "We're In The Money" played in big band style. This digitised snippet crops up from time to time during play.

Up to six players can take part in the game, each taking it in turns to play the market. You can play alone but the only one you have to beat is yourself since the computer does not take any competitive part in the proceedings. Each player can carry out whatever transactions he or she likes before ending the turn and passing play on to the next speculator.

During one turn, the player may buy, sell, visit the bank, check out his assets, see the top 15 score board or view a graph. For buying and selling purposes, a detailed but fairly uninspiring chart lists all the companies. Against every company is listed the price per share last turn, the current price, the net change, the number of shares available and, for each player, how many shares he owns, the cost of the original purchase and the amount of profit or loss made.



Visiting the bank allows you to borrow or repay part or all of a loan, always at the current interest rate. Details of your bank statement are shown, again in chart form. You may wish to turn your volume control right down during a visit to the bank since the inbuilt speech synthesiser is used at this point.

The graph options shows how well or badly a particular stock is doing while the assets option provides an analysis of your present standing in the game. Pressing the E key ends your turn.

At the completion of a round, the program randomly generates the share movements and supplies a ticker tape of sundry events influencing

MARKET

STOCK EXCHANGE						
Company Name	Last	Curr.	Chae.	Cost	Profit	Shares
British Airways	91	91	0			
Can Am Air	90	90	0			
General Motors	120	120	0			
Lotus Dev.	86	86	0			
Jaguar	79	79	0			
British Steel	49	49	0			
Tandy	130	130	0			
British Telecom	31	31	0			
ARL	73	73	0			
Coca Cola	63	63	0			
Syntex	123	123	0			
Mobil Oil Corp.	23	23	0			
S. P.	95	95	0			
Woolworths	23	23	0			
Dunlop	40	40	0			
Gen. Electric	47	47	0			
Warner Comm	30	30	0			
Mattel	18	18	0			
Cannon Inc.	119	119	0			
Kolls Royce	38	38	0			

SELL BUY LOAN ASSETS GRAPH END TOP 15
 Turn # 1 / Player # 1 / BILLY
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the market trends. At the end of ten rounds, the game is over and the program presents you with its verdict on your performance together and declares one of you the winner. High performing players are eligible for entry to the top 15 score board.

Stock Market is an enjoyable game but it could have been presented with a lot more flair than this version exhibits. The occasional pretty picture, the use of the inbuilt speech synthesiser and a snippet of digitised music do not add gloss to what is otherwise a lacklustre implementation of an entertaining game. For such a game as this, the asking price would have to be a good deal lower to tempt me into buying it.

B.C.

Graphics: 6
 Sound: 4
 Playability: 5
 Value: 5
 Price: £19.95



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WAVEFORM WORKSHOP

Phil Wilkes

The Amiga has many outstanding features, including its world-beating graphics, unique multitasking ability and quality software base. Equally high on the list of features is the Amiga's high quality stereo sound system. This article takes a look at how to use this from AmigaBasic and presents a utility program to help make the most of it.

Unlike the wide range of graphics commands, AmigaBasic contains only two commands related to the sound system. The **SOUND** command deals with actually playing notes, while the **WAVE** command determines the tone, or timbre, of these notes. Let us look at these in a little more depth.

SOUND

The **SOUND** command must be followed by two numbers. The first determines the frequency of a note to be sounded, that is how high or low it is. If you want to play music, your AmigaBasic manual gives a table to convert musical notes into frequency numbers.

The second number says how long the note is to last. Unlike frequency, where the number relates to a real world quantity (the frequency in Hertz), the length number uses an arbitrary unit system such that a number of 18.2 gives a length of one second! Again a table is given in the manual but as long as different note values relates to each other properly, the setting of this number is not too critical.

There are another two numbers which are not necessary but which give additional control of the **SOUND** command. These are volume, which can range from 0 to no sound up to 255 for the loudest sound. If not given, the volume is set at 128, just half way. The last number specifies on which of the Amiga's four sound channels the note is played. Channel 0 and 3 sound on the left of the stereo field and channels 1 and 2 sound on the right. If no channel is specified, channel 0 is used.

That is more or less all there is to the **SOUND** command. Just to give an example to make things clear:

SOUND 440,10,200,0

will play a note of 440 Hertz (which is A below middle C) for just over half a second at a fairly loud volume and on channel 0. Easy, isn't it!

WAVE

Using only the **SOUND** command will enable you to play complete tunes in four part harmony but all the notes would have the same tone. As you probably realise, real instruments have different tones, or timbres, to each other. It is largely this that makes a flute sound different from a trumpet, for instance.

The timbre of any instrument is defined by its waveform. If you were to examine a single musical note on an oscilloscope (or on the Amiga with a sound sampler), you would be able to see the shape of its waveform repeating across the screen. The **WAVE** command allows you to define the shape of a waveform for each channel, to give the sound more character.

The general form of the command is:

WAVE c%, TIMBRE%

where c% would equal the channel being defined and timbre% is the name of an integer array which defines the waveform. The array timbre% needs to contain 256 elements (0-255), each of which is set to between -128 and 127 to determine the height of the wave shape at that point. Not as straightforward as the **SOUND** command, is it!

The problem is that, unless you are an expert in acoustics, you will not know what a waveform will sound like. Trying endless combinations of numbers by trial and error until you get the effect you want is not my idea of fun!

But do not worry - help is at hand. Program 1 presented at the end of this article, entitled *Waveform Workshop*, allows you to see, hear, alter and test waveforms to your heart's content, all by just using the mouse. Having found a waveform you like, you can save it in a data file and then use it in one of your own programs by reloading it with program 2.

USING THE WORKSHOP

To use the program, simply type it into the AmigaBasic editor and save it in the usual way. If this is your first program, refer to your manual for how to do this.

When run, the program clears the screen, sets up a number of boxes at the

bottom and generates and displays an initial waveform in a large black area in the upper half of the screen. A note is also played using this waveform.

Just below the waveform display is a line of boxes containing the letters A-G. This represents four octaves of musical notes (no sharps or flats). By moving the mouse pointer over any of these and pressing the left hand button, they may be played just like a keyboard. Each note will sound as long as the button is held down. In this way, you can play simple tunes and test the sound in different ranges.

This keyboard facility is really only intended to test the waveform which is currently displayed and so is fairly basic (no pun intended!). The real meat of the program is in the boxes at the bottom, each of which performs a different function on the waveform. Let us look at each in turn.

SQUARE Clicking on this box makes the current waveform a square wave. This sounds a little buzzy and quite wooden, like a bright clarinet.

SAWTOOTH Sets the waveform to a sawtooth wave, which is bright and brassy, like a trumpet.

PULSE This sets a pulse wave, which sounds quite thin and reedy, like an oboe.

TRIANGLE A triangle wave sounds mellow, like a flute.

In addition to these four preset waveforms, there are two options which generate different types of random waves each time they are selected.

RANDOM This type of wave is made by adding a random amount, positive or negative, to each preceding value. The results are usually quite bright and full.

NOISE Each point on the wave is just a random value, unrelated to any other. The results are usually quite buzzy.

All the options so far select a new type of waveform to work on. The next few options modify existing waveforms.

FILTER This option applies a smoothing algorithm to the waveform. This reduces the higher pitched elements of the sound, making the tone less bright. For anyone familiar with synthesisers, it is very like the effect of a low pass filter. The smoothing takes a few seconds, so the program asks you to wait!

FILTER × 5 You can make large filter effects by clicking on the Filter box a few

times. However, it is easier to use this option which is like using Filter five times. So instead of sitting there clicking on Filter, you can go and make yourself a coffee!

LOUDER This option doubles the level of each point. If the waveform is quiet, this will increase its volume. If any points would have gone beyond the range of the display, they are limited to the maximum value. This introduces clipping distortion, which can be used creatively to brighten a dull sound.

CENTRE This has no actual effect on the sound but centres the waveform in the display. If for example a random waveform were drawn but it was all in the top half of the display, using Centre followed by Louder would increase the volume without distortion (if that is what you want!)

FOURIER This does not change the waveform but displays the harmonics which make up the sound. Any regular waveform is actually made up from simple tones called harmonics. The lowest of these has the same wavelength as the

complex waveform, with other harmonics being at 2x, 3x, 4x the frequency, etc. The scale around the waveform display comes in quite useful here. The marks along the bottom indicate each harmonic and each mark vertically represents a volume of 20 units.

This option performs what is known as a fourier transform of the waveform to extract the harmonic values. Although not of direct use, it is interesting to see and may help your understanding of how sounds are made up. Note, for example, that the square and triangle waves are made up of odd harmonics only (every other value is zero) and that the upper harmonics are reduced following the filter option.

RESOUND This refines the wave data and redisplay the waveform on the screen. It has two main uses. Firstly, it will redisplay the waveform after using Fourier. It is also used after a very special hidden feature – waveform drawing!

The waveform display actually responds to the mouse, enabling you to

modify or totally redraw the waveform. However, the effects of any changes will not be heard until Resound is selected – do remember!

UNDO Very useful, this! If you preferred the previous waveform and want it back, click on this and your prayers will be answered!

SAVE This will prompt for a waveform name and then save the waveform data in a file on disk, so that it can be used in another program.

QUIT Leaves the program!

Using the Waveform Workshop, a library of useful waveforms can be assembled. To use them in your own programs, incorporate program 2 into them. This simply prompt for a waveform, reads it in off disk and then defines channel 0 accordingly. Feel free to amend this as you require.

I hope you enjoy Waveform Workshop as much as I have enjoyed developing it. If it leads you to experiment with different sounds in your own programs, my aim will be achieved. Happy music making!

```
Program 1      REM Waveform Workshop Program
                REM by Phil Wilkes  June 1988

                RANDOMIZE TIMER
                DIM a(255),Timbre%(255),Backup%(255)
                DIM harm(32),pitch(30)

                GOSUB boxes
                GOSUB random
                select%=0
                WHILE select%<>15
                    GOSUB getselect
                    IF select%=1 THEN
                        GOSUB square
                    ELSEIF select%=2 THEN
                        GOSUB sawtooth
                    ELSEIF select%=3 THEN
                        GOSUB random
                    ELSEIF select%=4 THEN
                        GOSUB pulse
                    ELSEIF select%=5 THEN
                        GOSUB triangle
                    ELSEIF select%=6 THEN
                        GOSUB noise
                    ELSEIF select%=7 THEN
                        GOSUB filter
                    ELSEIF select%=8 THEN
                        GOSUB filterfive
                    ELSEIF select%=9 THEN
                        GOSUB louder
                    ELSEIF select%=10 THEN
                        GOSUB newwave
                    ELSEIF select%=11 THEN
                        GOSUB fourier
                    ELSEIF select%=12 THEN
                        GOSUB centre
```

```
                ELSEIF select%=13 THEN
                    GOSUB undo
                ELSEIF select%=14 THEN
                    GOSUB wavesave
                END IF
                WEND
                CLS
                END

newwave:
    LINE (64,6)-(576,134),2,bf
    FOR s%=0 TO 255
        Backup%(s%)=Timbre%(s%)
        Timbre%(s%)=INT(a(s%))
        PSET (64+2*s%,70-Timbre%(s%)/2)
    NEXT
    WAVE 0,Timbre%
    SOUND 256,40,200,0
    RETURN

getselect:
    select%=0
    WHILE select%<0
        REM Remove previous mouse clicks
        WHILE MOUSE(0)>0
            WEND
        WHILE MOUSE(0)=0
            WEND
        x%=MOUSE(1)
        ix%=INT(x%/128)
        y%=MOUSE(2)
        iy%=INT((y%-159)/8)
        IF iy%=0 THEN
```



```

select%=3*x%+1
ELSEIF iy%=1 THEN
select%=3*x%+2
ELSEIF iy%=2 THEN
select%=3*x%+3
ELSE
select%=0
IF x%>63 AND x%<576 AND y%>6 AND y%<135 THEN
s%=(x%-64)\2
PSET (64+2*s%,70-INT(a(s%))/2),2
a(s%)=(70-y%)*2
PSET (64+2*s%,70-INT(a(s%))/2)
END IF
IF y%>142 AND y%<152 THEN
SOUND pitch(INT(x%/21)),.6,200,0
END IF
END IF
WEND
RETURN

```

boxes:

```

FOR y%=0 TO 2
FOR x%=0 TO 512 STEP 128
READ a$
LOCATE 21+y%
PRINT PTAB (x%+20);a$;
NEXT
NEXT
LINE (0,159)-(640,159),3
LINE (0,167)-(640,167),3
LINE (0,175)-(640,175),3
LINE (0,183)-(640,183),3
FOR x%=128 TO 512 STEP 128
LINE (x%,159)-(x%,183),3
NEXT
FOR y%=6 TO 134 STEP 16
LINE (58,y%)-(582,y%),3
NEXT
FOR x%=72 TO 576 STEP 16
LINE (x%,140)-(x%,134),3
NEXT

```

LOCATE 19

a%=67

```

FOR x%=0 TO 588 STEP 21
PRINT PTAB(x%+6)CHR$(a%);
a%=a%+1
IF a%=72 THEN a%=65
LINE (x%+21,142)-(x%+21,152),3
NEXT
LINE (0,142)-(640,142),3
LINE (0,152)-(640,152),3

```

FOR s%=0 TO 6

READ pitch(s%)

pitch(s%+7)=pitch(s%)*2

pitch(s%+14)=pitch(s%)*4

pitch(s%+21)=pitch(s%)*8

NEXT

```

pitch(28)=pitch(0)*16
pitch(29)=pitch(28)
pitch(30)=pitch(29)
RETURN

```

```

DATA " square "
DATA " pulse "
DATA " filter "
DATA " resound "
DATA " undo "
DATA " sawtooth "
DATA " triangle "
DATA "filter x 5"
DATA " fourier "
DATA " save "
DATA " random "
DATA " noise "
DATA " louder "
DATA " centre "
DATA " quit "

```

```

DATA 130.81,146.83,164.81
DATA 174.61,196,220,246.94

```

sawtooth:

FOR s%=0 TO 255

a(s%)=s%-128

NEXT

GOSUB newwave

RETURN

square:

FOR s%=0 TO 127

a(s%)=-128

NEXT

FOR s%=128 TO 255

a(s%)=127

NEXT

GOSUB newwave

RETURN

triangle:

FOR s%=0 TO 127

a(s%)=s%*2-128

NEXT

FOR s%=128 TO 255

a(s%)=127-(s%-128)*2

NEXT

GOSUB newwave

RETURN

pulse:

FOR s%=0 TO 240

a(s%)=-128

NEXT

FOR s%=241 TO 255

a(s%)=127

NEXT

GOSUB newwave

RETURN


```
random:
a(0)=RND*256-128
FOR s%=1 TO 255
a(s%)=a(s%-1)+RND*40-20
IF a(s%)>127.9 THEN a(s%)=127.9
IF a(s%)<-128 THEN a(s%)=-128
NEXT
GOSUB newwave
RETURN
```

```
noise:
FOR s%=0 TO 255
a(s%)=RND*256-128
NEXT
GOSUB newwave
RETURN
```

```
filter:
LOCATE 10,32
PRINT " Please Wait ";
FOR t%=0 TO 24
GOSUB onefilter
NEXT
GOSUB newwave
RETURN
```

```
filterfive:
LOCATE 10,32
PRINT " Long Wait! ";
FOR t%=0 TO 124
GOSUB onefilter
NEXT
GOSUB newwave
RETURN
```

```
onefilter:
temp=a(0)
FOR s%=0 TO 254
a(s%)=(a(s%)+a(s%+1))/2
NEXT
a(255)=(a(255)+temp)/2
RETURN
```

```
louder:
FOR s%=0 TO 255
a(s%)=a(s%)*2
IF a(s%)>127.9 THEN a(s%)=127.9
IF a(s%)<-128 THEN a(s%)=-128
NEXT
GOSUB newwave
RETURN
```

```
centre:
sum=0
FOR s%=0 TO 255
sum=sum+a(s%)
NEXT
sum=sum/256
FOR s%=0 TO 255
a(s%)=a(s%)-sum
```

```
IF a(s%)>127.9 THEN a(s%)=127.9
IF a(s%)<-128 THEN a(s%)=-128
NEXT
GOSUB newwave
RETURN
```

```
undo:
FOR s%=0 TO 255
a(s%)=Backup%(s%)
NEXT
GOSUB newwave
RETURN
```

```
wavesave:
LOCATE 10,25
INPUT "Waveform name: ",w$
w$=w$+".wave"
OPEN w$ FOR OUTPUT AS #1
FOR s%=0 TO 255
WRITE #1,Timbre%(s%)
NEXT
CLOSE #1
GOSUB newwave
RETURN
```

```
fourier:
LINE (64,6)-(576,134),2,bf
factor=2*3.1415926#/256
FOR h%=1 TO 32
a=0:b=0
FOR s%=0 TO 255
a=a+a(s%)*SIN(s%*factor*h%)
b=b+a(s%)*COS(s%*factor*h%)
NEXT
harm(h%)=(a^2+b^2)^.5/128
IF harm(h%)>.5 THEN
LINE (55+h%*16,134)-(57+h%*16,134-.79*harm(h%)),,bf
END IF
NEXT
RETURN
```

Program 2

REM Waveform Loader Program
REM by Phil Wilkes June 1988

```
DIM Timbre%(255)
INPUT "Enter waveform name : ",w$
w$=w$+".wave"
OPEN w$ FOR INPUT AS #1
FOR s%=0 TO 255
INPUT #1,Timbre%(s%)
NEXT
CLOSE #1
WAVE 0,Timbre%
SOUND 250,10,200,0
END
```


TURBOPRINT & INT-SWITCH

Alastair Statham has found his hard copy easier and his memory more manageable since discovering two new utilities from PDC

TURBOPRINT

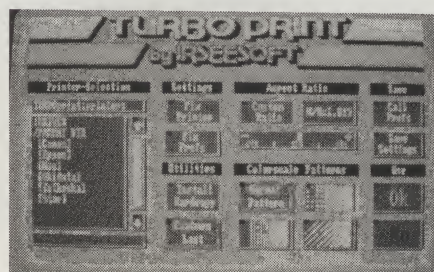
Anyone suffering the shortcomings of the printer support in WB1.2 and either unable to wait for WB1.3 or doubting that it will be a complete solution now has yet another alternative. TURBOprint is available NOW and it offers both support for a wide variety of printers and enhanced printing speed. It is written entirely in 68000 assembler and occupies just 15k of RAM. The Amiga printer-device has been re-programmed to give extended function compatible with the supplied turbo-drivers. TURBOprint runs invisibly in the background complementing the existing preferences and providing extra facilities such as fast-RAM disable and hot-key screen printing in both colour and monochrome.

"TURBOprint runs invisibly in the background complementing the existing preferences and providing extra facilities"

TURBOprint is initialised by booting from it instead of the Workbench disk. Although a copy of the disk may be used the key disk is annoyingly still needed to complete the initialisation. Once loaded the Amiga is reset and Workbench may be loaded as normal. TURBOprint will survive any subsequent soft-reset of the Amiga. The printer preferences are controlled from a single screen which is invoked by clicking the TURBO-PREFS icon from the TURBOprint disk. There are so many printer types that each manufacturer has their own subdirectory. Aspect ratio control and colourscale shading pattern

selection are both supported. If memory permits the printer and preferences settings can be fixed in memory using simple toggle gadgets. All controls are thoroughly documented in the eighteen page A5 handbook supplied with the disk.

To print a picture you need only press CTRL & ALT + P. This will print out the present screen contents regardless of screen mode including HAM. Alternatively a Black & White dump can be obtained by pressing CTRL & ALT + O. The background



colour when using this mode is set to white to reduce ribbon wear. Printing can be aborted at any time by using the CTRL & ALT + C combination.

TURBOprint is designed to be compatible with all Amigas and most printers. Its fast support for dot-matrix, thermal, ink-jet and laser printers deserves to attract the attention of anyone struggling with the limitations of the standard WB1.2 printer support. Especially if they are willing to pay around thirty pounds for a comprehensive answer.

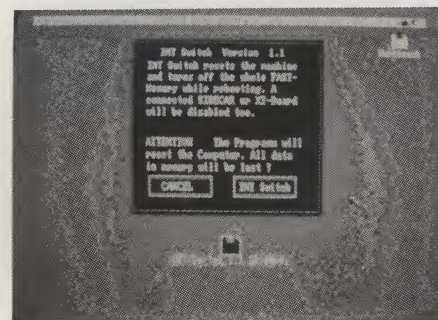
INT-SWITCH

All those lucky people who have upgraded their Amigas to have over 512k of RAM can now be rid of the menace of programs unable to cope with the extra storage. For under ten pounds George Thompson Services are now offering a software solution called INT-

SWITCH. This useful little utility, from PDC, goes several steps further than NOFASTMEM as it not only freezes out the RAM expansion but also turns off Sidecar and XT/AT boards. It also survives a soft reset of the Amiga, which means that at last you can run those programs than need booting from cold without having to take the otherwise unnecessary risk of unplugging peripherals first.

"It not only freezes out the RAM expansion but also turns off Sidecar and XT/AT boards"

Supplied on a single disk in a wallet on which are printed just four lines of instructions, INT-SWITCH is simplicity itself to use. Clicking the single icon displayed by selecting the INT-SWITCH disk will display a requestor offering the options of cancelling the function or installing INT-SWITCH. If you elect to install the utility it will tuck itself away, disable any extra RAM, Sidecar, or XT/AT boards and reset the Amiga. If you do not want the bother of using yet



another disk at start-up time you can even copy INT-SWITCH to your Workbench disk because copy-protection has thankfully been waived in the interests of convenience to the user. This low cost, easy to use solution to an age-old problem should prove attractive to anyone who is tired of continually removing expansion boards just to let undisciplined programs run. **A.S.**

Contact: George Thompson Services, Freepost, Dippen, Brodick, Arran, Scotland KA27 8PT. (077 082) 234.

F^{OOTBALL}



I

Addictive

The success of Football Manager surprised many people. Instead of recreating the action of on-field football, it put you in the boots of the manager. This meant most of the game was played with text screens, only very basic match highlights provided some action. Yet it stayed a top seller for years; in fact the longest ever chart inhabitant in all formats except perhaps for Sublogic's venerable Flight Simulator. Now Amiga users can get in on the management game with the sequel.

After an untidy, but impactful, title screen you are asked to choose your team. The mouse cycles through a list of teams until you find the one you want. Next you are offered sponsorship which you can accept or reject in anticipation of a higher sum. After picking the skill level you are ready for the first game.

Eleven blank boxes are laid out across the pitch representing the available positions. Here you can weigh up the pros and cons of each player's skill and fitness ratings and decide upon the formation. You can pick your

whole pitch. There is some minor difficulty in keeping track of the ball and knowing who is in possession. Occasionally the action seems jerky and the players mark each other very tightly but it certainly serves its purpose of creating tension. A few sampled crowd cheers add to the atmosphere.

defenders, midfield and attackers, judging carefully the skill and fitness levels. Now you can sit back and watch the game.

This is where the most obvious improvement has been made. Whereas the original only showed a few goal-mouth incidents for each game, FM II shows highlights across the



MANAGER

I



matches you can also buy and sell players, give the team passing practice, view your financial and league status and load or save the game situation. At first it may seem there is a lot to the game but once a few games have been played, the same situations occur quite often. Even so, the role of manager is highly involving, a feeling enhanced by watching the match sequences.

Though many people will have experienced Football Manager I, there certainly seems a place for FM II on the Amiga – there is nothing like it. I had expected a more user-friendly game from the Amiga; the use made of the mouse is not what it should be. Despite that, FM II will be well appreciated and enjoyed by football fans. It is already being spoken of as the Chart Number One in a number of formats and in many countries. But it probably will not go on to top the FM I, Kevin Tom's famous forerunner – change in computing is moving to quickly. But who would have predicted a five year life for that when it came out?

B.V.



At half time you can put on a couple of substitutes if you see players tiring. Action replays and a scoreboard keep you up to date with the score. And if you are the football manager you think you are, victory may be yours, accompanied by 'over the moon' joy for you and 'parrot sickness' for your opposition.

After the match you are given an injury report. Any player with a fitness rating of less than fifty will have to be rested. Between

PROFESSIONAL TEXT ENGINE

Finding a text editor that will meet ALL your requirements is likely to be very difficult. Les Cooke, however, has discovered a multi-talented editor that might just that.

Do you remember the 'editors' provided with the early home computers? They were pretty crude affairs. They usually operated one line at a time and to make any changes was not easy. In fact, they were downright tedious! After a while, 'full-screen' editors arrived. The Amiga provides two full-screen editors: 'ED' and the BASIC editor provided on the 'EXTRAS' disk.

Both these editors are dedicated to a particular type of editing. 'ED' is perfectly adequate for general text and command files, while the BASIC editor is quite good for BASIC programs. Neither editor would be much good for word processing applications. They do not have the appropriate formatting functions and the BASIC editor would have the disturbing habit of converting certain words to upper case!

Word processing is best done with an editor designed specifically for word processing — a dedicated editor. 'Scribble!' and 'Textcraft' are two such products available for the Amiga, both of which are excellent word processors. However, whilst they would probably be adequate for entering programming language source, this particular job could be made a lot easier if you had an editor tailored to the language you were using.

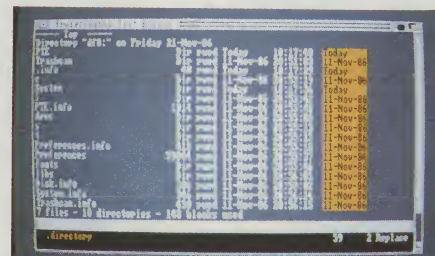
The BASIC editor supplied on the 'EXTRAS' disk goes a little way to provide such tailoring. All BASIC commands and reserved words are converted to uppercase and when a new line is started it preserves the indentation of the previous line.

A clever editor could go a little further than this. How many times have you made silly errors like a 'WHILE' without a 'WEND', a 'FOR' without a 'NEXT', or a 'GOSUB' without 'RETURN'? Never? Come on — be honest. This clever editor could supply the necessary terminating parts of those statements automatically and even look after the indentation of nested constructs. This would save those daft time-consuming, errors and force a

consistent style to your source. A consistent style is quite important, it makes the source easier to read. If you can read it easily, you stand a better chance of understanding it and if you understand it you might get it right.

Professional Text Engine (PTE) attempts to resolve this need for different kinds of editors for different jobs by providing one that can be tailored as you wish. However, before going any further into this let us have a quick run-down on the essentials of PTE.

PTE is distributed on a single disk that is not copy protected. This disk is pretty



much full, so two disk drives would make life easier. It will run on a 512K machine but as the files being edited are held in storage a larger machine would be advantageous. A comprehensive 200 page manual is supplied. It contains two distinct parts: the first describes how to use PTE and some of its functions, the second is a reference section of the commands and functions in alphabetical order. The manual does not take into account any special features of the Amiga but an Addendum file is provided on the disk to rectify this.

Although the manual does not mention

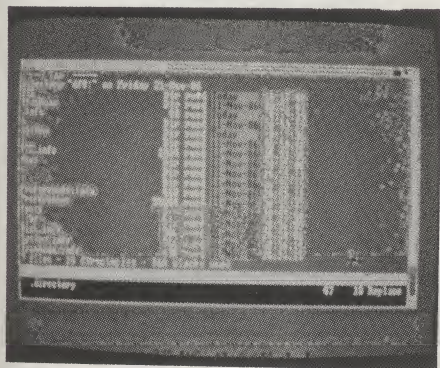


Amiga features, PTE does use them and is started in the usual way, by clicking on icons. I was disappointed to find that the editing window was NTSC size and there appeared to be no way to change this. This window is divided into separate parts. The top line of the window is the usual Menu Bar for pull-down menus. The bottom line is for messages, the next line up is the Status Line and above that is the Command Line. The Message Line is for error and informational messages, the Status Line shows the file name, cursor position (row and column number) and edit mode, while the Command Line is for entering Commands and Functions. Between the Menu Bar and the Command/Message/Status Line is the Editing Area itself.

At the right of the window is the familiar vertical scrolling bar but there is no horizontal scrolling bar. I found this inconvenient for files wider than the window. There is no font control, text style control, nor colour control. There is no spelling check nor word count and PTE uses the American keymap as standard.

PTE is 'driven' in the usual ways: Pull-down menus, function keys and a command line. So far, so good. Not much different from other editors. However, what makes PTE special is its very rich function language. This function language is in effect a high-level language that is purpose built to operate on the file being edited. It allows you to tailor the way PTE behaves in almost any way you chose by creating 'definitions' from the function language.

PTE is supplied with a number of these definitions. They control the way in which PTE behaves and definitions are included for editing: C source, Assembler source and general documents. One definition even provides an approximation of 'WordStar'. These definitions are actually made up from the functions and commands that are part of PTE. They are in files that can be viewed with PTE, or any other editor and can be used as examples for your own definitions or modified in your own way.



PTE comes with a number of features that make it stand out from most other editors: 'blocks', an extended command set, a function language and a directory list facility.

Blocks

The scope of some of the commands and functions in PTE can be limited to blocks of text rather than the whole file. A block can be any rectangular area within the file and need not be limited to complete lines. For example, it is possible to define a block covering columns 3 to 7 and extending from lines 10 to 76. The block is indicated by being highlighted as a different colour (orange by default) and most functions will operate on the text only in this block.

Extended Command Set

PTE contains a number of commands not often found in other editors. These include: FILL, NUMBER, SORT, DEFINE, MACRO and MENU.

FILL fills a block with a specified string. NUMBER numbers lines in a block with a right justified column of numbers and allows you to specify the starting number, the increment and the base. SORT allows you to use the characters in a block as a key for sorting all the lines touched by that block. Sorting can be in ascending or descending order. DEFINE allows you to define a Function or a literal to a Function Key. E.G. DEF F10 = 'What is the difference between a duck?' will put the string at the current cursor position when F10 is pressed.

Commands themselves can be used as program steps in a macro file. The MACRO command causes execution of the commands in the file. MENU allows you to define your own pull-down menus. Finally, a refinement of the LOCATE and CHANGE commands is that you can specify precise matching rules.

Function Language

There are about 160 functions in PTE. They range from logical operations such as IF LEFT EDGE which tests if the cursor is at the left edge of the screen, to manipulation type functions such as RIGHT JUSTIFY BLOCK which right justifies text in a block to the right edge of that block.

'Function can be assigned to any keys, not just the function keys'

These functions are the powerhouse of PTE — they can make it sing and dance (well, almost). Functions can be assigned to any keys, not just the function keys and also keys in combinations with SHIFT, ALT and CTRL. In addition, new commands can be defined by assigning the command name to a small program written in the function language. Here are some examples.

'Def F7 = [delete line]' assigns the

delete line function to function key F7. When F7 is pressed, the line on which the cursor is placed will be deleted.

'Def s-F8 = [previous file]' assigns the previous file function to the SHIFT F8 key combination.

The next example shows how a new command is defined. The command is called 'close-window' and it saves all modified files, quits unmodified files and unconditionally quits a file if it has a name of 'directory'.

```
def close-window = [do]
def close-window + [if same] 'directory' [environment 113]
def close-window + [execute] 'quit confirm'
def close-window + [else]
def close-window + [if modified]
def close-window + [error 2] 'Saving file ...'
def close-window + [execute key F3]
def close-window + [else] [execute] 'quit'
def close-window + [end if]
def close-window + [end if]
def close-window + [loop]
```

I think this last example illustrates the power of PTE. It shows that the function language is a real programming language with loops, conditions, nested conditions and readability. In addition to the necessary logical constructs illustrated in this sample, the range of functions provided covers ones to process text, some to control the environment and some to interact with the mouse.

One example of how functions have been used to create useful definition files is in the definition for C Source files. In this, operation of SHIFT RETURN will place an opening brace '[' at the end of the current line and insert a closing brace ']' on the next line indented to the same position as the previous line. No mismatching braces here!

Directory List

Finally, a very useful command is DIRECTORY. This creates a list in your editing window of the files in the current directory. The list is AMIGADOS LIST format. Double clicking on an entry in this list will either present another list if you clicked on a directory, or present you with a file for editing if you clicked on a file name. I liked this feature a lot.

PTE is, then, a powerful and flexible editor. To get the most out of it you will have to invest quite a bit of time learning how to program and use the functions to your best advantage. Persevere, it will be worth it.

L.C.

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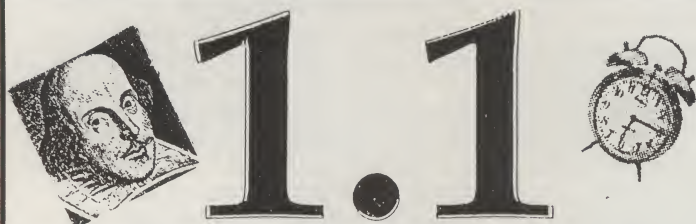
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GAMES BOOKS

Film of the book, stage play of the film and now . . . Book of the Game! Bill Donald 'flies' through a selection of games books.

Software simulations are growing in popularity. The venerable *FLIGHT SIMULATOR* has been around since 1982 and continues as a solid seller in the PC, Macintosh and Amiga markets. I am willing to bet that in ten years time when a lap-top 50MHZ 68040 machine is considered *passé*, *FLIGHT SIMULATOR* in one shape or form will still be in the top ten selling recreational software. However, *FLIGHT SIMULATOR* is under attack from other types of simulation, in particular maritime simulations. The third but rather more conventional is the war-game/political strategy simulators.

There are some books which serve as an adjunct to simulation software. Some of these are not yet freely available in Europe. However, you should be able to order them using the ISBN code.

Since *FLIGHT SIMULATOR* is generally recognised as the great grandfather of the breed books available are:

Flight Simulator Co-Pilot

Flying on Instruments with Flight Simulator

Flight Simulator Co-Pilot

The author of *Flight Simulator Co-Pilot* has written two previous books on *FLIGHT SIMULATOR*. These were simply a series of flight descriptions – you had to input the given position setting and then follow the narrative. Obviously, after working your way through the books, there was little else for you to do, other than start again. The books concerned were published by Compute! Books and came under the generic titles of *40 Great . . . Adventures*.

In this book the author develops the theme of descriptive flights and provides operating details of the aircraft you are flying. The information goes beyond that described in the documentation supplied to a *FLIGHT SIMULATOR* user.

Flight Simulator Co-Pilot is divided into

three sections – basic flight instruction, navigation and instrument flying and flying for fun. The first section deals with most aspects of the aircraft and the reader is given comprehensive coverage of controlling turns, climbs and descents. If you have difficulty in take-offs and just flying your aircraft, then this section provides a wealth of very useful information.

The second section is slightly more advanced and is concerned with events outside the aircraft. Here we are introduced to the intricacies of navigation using instruments. Assumptions are made that you are able to fly straight and level and can complete a take-off and landing without disaster. I found this section to be very valuable and learned a great deal.

The ultimate test of your navigational knowledge using *FLIGHT SIMULATOR* is a night flight and you really have to know your stuff when it comes to landing – just to make it more fun, try the effect of having a cloud-base down to 500 feet. This is guaranteed to test your nerve!

Section Three provides a selection of flights to various places which are enhanced with ILS (Instrument Landing System) approaches, half-rolls and explore the riddle of Eagle Field clones. The only flaw with this section is that certain flights require the use of Scenery Disks 2-5. Unfortunately, these are not yet available for the Amiga. At the time of writing we have to be content with scenery disks 7 and 11.

If you want to go beyond the user documentation of *FLIGHT SIMULATOR*, then this book should be the first item on your list.

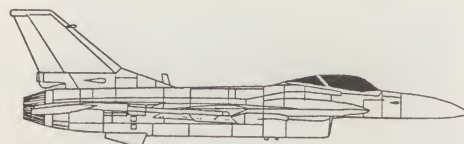
Title: *Flight Simulator Co-Pilot*

Author: Gulick C

ISBN: 1-55615-001-6

Publisher: MicroSoft Press

UK Price: £7.95



Flying on Instruments with Flight Simulator

The blurb on the cover of this book informs us that you can learn to 'Fly in the worst weather, the densest clouds, and darkest nights in *Flight Simulator*'! Well this seems just a little optimistic for both the abilities of the software and most would-be pilots. However, this book does go a very long way to providing a basis for learning more about instrument flying.

The bulk of this book is made up of IAP (Instrument Approach Procedure) charts for a huge number of USA airports. In common with the first book in this review, many of these are just not accessible due to the limited number of scenery disks. However, these charts are considerably more detailed than those supplied with the scenery disks and *FLIGHT SIMULATOR* itself. For example, the charts provide details of alternative runways at an airport as well as missed-approach procedures. The appendix also provides a rate-of-descent table, useful where the localiser is only a course direction type.

Chapter three explains the syntax and structure of an IAP chart. The following chapter leads you into the aircraft electronic equipment (avionics) and how to begin an instrument-controlled flight. The chapter concludes with a take-off under instrument control. Chapter five, six and seven get down to the meat of the subject and take you through VOR (VHF Omnidirectional Range) approaches, NDB (NonDirectional Beacon) approaches and ILS (Instrument Landing Systems) approaches.

The final chapter attempts to put some of what you should have learned into

continued

practice. A night landing scenario is no problem, you reply – but this one is over water! What do you do when you are in cloud and part of your instruments fail? Chapter eight gives some suggestions.

I found it all rivetting stuff, principally because it revealed yet another rich layer of skills and knowledge necessary if you want to really get into flying. I have to admit to my admiration of the original programmer of *FLIGHT SIMULATOR*, Brue Artwick, for providing a seemingly endless simulator experience. OK, I will admit it, it is STILL one of my favourite pieces.

Strongly recommended if you want to enter the elite band of *FLIGHT SIMULATOR* experts. The subject matter is, of necessity rather technical but this book makes it digestible. My only complaint was related to the binding. A spiral-bound book makes more sense when there are a large number of diagrams. Unfortunately, this book was perfect-bound and consequently was difficult to lay flat without ultimately causing damage to the binding.

Title: *Flying on Instruments with Flight Simulator*

Author: Stern J.M.

ISBN: 0-87455-091-2

Publisher: Compute! Books

USA Price: \$9.95

Sub Commander Tactics and Strategy for WWII Submarine Simulations

A completely new market was discovered by software houses during 1980 – maritime simulations, in particular submarines. The first of the breed was *SILENT SERVICE* which was quickly followed by *SUB BATTLE SIMULATOR* and *UP PERISCOPE!* Although these have gained in popularity they do not, as yet, offer the depth (pun unintended) and range of *FLIGHT SIMULATOR*. In fairness to these software pieces, they are still first-generation and *FLIGHT SIMULATOR* has a five year lead. However, there seems plenty to suggest that the same type of position-setting mechanism could be incorporated into submarine simulations to give infinite variety. The only problems appear to arise over how the visual data is collected. Anyone can rent an aeroplane and capture the necessary data, finding someone who will let you borrow their submarine could be just a little tricky!

Given the limitations of the current generation of submarine software, this book has some obvious padding. In fairness, this is not meant as a criticism, because the padding serves as useful background material to what life was like in a USA Pacific submarine during the 1939-1945 conflict. Having read this account, it convinced me that anyone who can live and work in a submarine

deserves a medal or mental certification. I rather suspect that I would quickly fall into the latter category!

The real learning starts in chapter four and continues through to chapter six. In these parts the reader is introduced to explanations and illustrations of basic attack philosophy. We learn about attack tactics, defensive strategies and manoeuvres. When you have gained some idea of this, the book moves us on to a hints and tips section for each software simulation.

I must admit that I picked up a lot more knowledge than I realised and this was reflected in my playing of *SILENT SERVICE*. Anyone who can sink a cruiser, carrier and two destroyers in the impossibly difficult War Fleet scenario and still survive must be doing something right. Some very useful tips such as firing a spread of torpedoes whilst at depth in the direction of the target usually manages to hit something were culled from this book.

The book is well illustrated with diagrams to amplify the text and gives a great deal more information on the various control factors than the user documentation. *SUB COMMANDER* makes it clear the key to successfully sinking your opponents is patience, patience and more patience.

Very readable and eminently useful for anyone who has one of these rivetting simulations.

Title: *Sub Commander Tactics and Strategy for WWII Submarine Simulations*

Author: Sheffield J.M.

ISBN: 0-87455-127-7

Publisher: Compute! Books

USA Price: \$12.95

Balance of Power International Politics as the Ultimate Global Game

This game has gained a cult following for a large number of reasons. The first is the infinite variety it offers, the second is that *BALANCE OF POWER* requires a level of intellect that is beyond the scope of most recreational software. The object of the simulation is simple – to score points over and above your opponent, the Amiga, by gaining prestige and influence among the nations of world. However, the world influence does not mean military domination. A quick invasion of Cuba because it looks temptingly close to the USA will usually result in a black screen and a message to the effect that WWII has started and the game is over. The substance of *BALANCE OF POWER* is an excursion into the arts of subtlety and judgement. The algorithms which control each game have been carefully chosen and crafted.

So enough about the simulation, what about the book? The author, Chris Craw-

ford also happens to be the programmer behind *BALANCE OF POWER* and consequently is well qualified to write it. On the surface, the subject matter could easily entice an author into the trap of boring writing. However, with chapter titles like *The Wonderful World of Insurgency* it is clear that the author is determined to avoid this.

The book is aimed at three audiences – purchasers of *BALANCE OF POWER* who have developed a curiosity about geopolitics. The second audience is someone moving from the opposite direction, namely from geopolitics to game playing. The third audience is a reader who is interested in the design of sophisticated computer games and wants to follow the effort in detail.

In the context of the third audience, the history behind the production and release of *BALANCE OF POWER* is provided and quite a tale it is. The basis of an interesting plot lies behind this story and we have to thank both Chris Crawford for his perseverance and Roger Buoy, President of Mindscape for having faith in the product. The book gives the credit to Roger Buoy for the final title although I did like Roger's other suggestion of *That's the Way the Planet Crumbles!*

The main chapters are organised around the central themes of the game – insurgencies, coups d'etat, Finlandisation and crises. These are then structured into a historical background, the algorithms used and finally some colourful and historical anecdotes related to the topic. The appendix provides a game at Expert level as played by the author, complete with comments and justification for his decision making.

This structure makes for a well-balanced, easily assimilated book. The attention to detail that makes *BALANCE OF POWER* such a potent game has clearly been applied to this book. Although a programmer, I think that Chris Crawford would find ready employment in the higher reaches of the State Department or the Foreign Office. His knowledge of history and geopolitics is not over-reached by his obvious enthusiasm. He makes no bones about the shortcomings of computer simulations and *BALANCE OF POWER*. Indeed, he goes to some length to justify why he regards *BALANCE OF POWER* as a game, and not a simulation.

One of the few books that comes under the heading of computers that can be picked up and re-read many times. Essential reading for owners of *BALANCE OF POWER* and a work of reference to any games designer.

Title: *Balance of Power International Politics as the Ultimate Global Game*

Author: Crawford C.

ISBN: 0-914845-97-7

Publisher: MicroSoft Press

UK Price: £8.95

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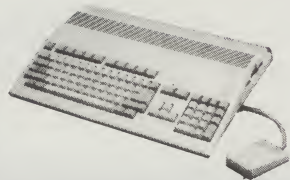
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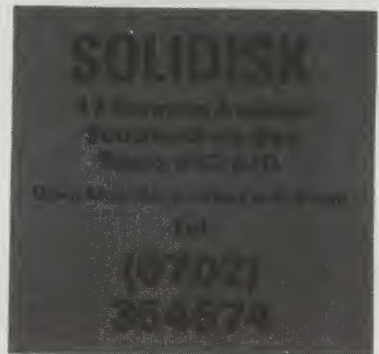
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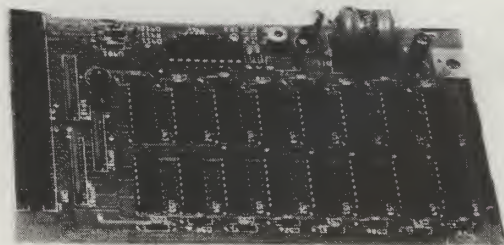
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Enlightenment: Druid II

Firebird

Firebird's Druid, originally released on the 64 was well received as one of the first Gauntlet variants. Now the sequel has arrived, but has it missed the boat?

It was one hundred and three years ago that Hasrinaxx the druid banished Acamantor from the land of Belorn. After a long break to regain his strength, he is back raising the walking undead and turning the animals of the forest against the villagers. You saw him off once and you intend to do it again. Explore the fifteen levels and seek out the white orb to rid the Earth of Acamantor for good.

Hasrinaxx starts off with a handful of spells to help him on his way. Circular icons on the ground can be collected and placed in your spell book. Some can give magical armour, others can create a protective wall of fire or water. One of the most interesting carried over from the original is the elemental spell, which conjures up one of three types of servants. These can either be controlled by you or a second player, though controlling them yourself is very awkward. This introduces a variation on the standard two player mode found in Gauntlet, in which the second player acts as a bodyguard to Hasrinaxx.

'One of the most interesting, carried over from the original is the elemental spell, which conjures up one of three types of servants.'

Among others, zombies, spiders and blobs pop up from the undergrowth of the multi-directional scrolling lands. A shot or two from your finger sends them back. Most of the enemies are badly lacking in imagination and character. Spiders and wobbling slime-blobs are hardly original. Most of the sound effects are coarse crunches and bangs, with a few grunts and gulps here and there. A long but repetitive piece of music using sampled instruments is entertaining for a while but the "music off" option is a welcome inclusion.

Enlightenment makes use of machines with over half a megabyte by loading in more of the game at the start, reducing the amount of loading during the game.



Most of the trouble with Enlightenment is just that it uses a very tired game style. It is not a simple clone of Gauntlet but the gameplay is very similar, only somewhat slower moving. Would-be Merlins could find something here to please them, but most of us have done this all before. Games of this style have largely been put out to pasture by now, but newcomers who have not played one might want to take a look.

T.H.



Graphics: 7
Sound: 7
Playability: 6
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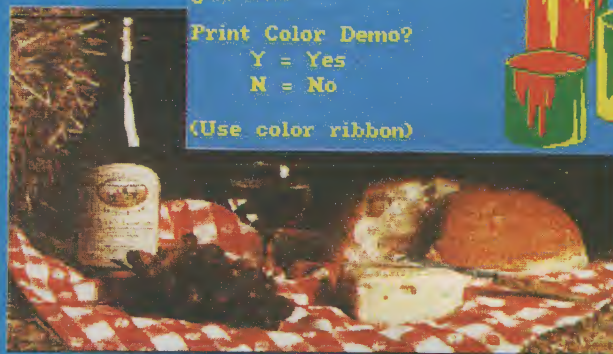
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AMIGA PROGRAMMING

Are your Gadgets mutually exclusive? No . . . Paul Andreas Overaa explains.

Gadgets are sometimes needed which, although freely selectable, have the property that the selection of any one gadget automatically de-selects any previous selection. One example of this would be a game which uses 'toggled boolean gadgets' to allow users to select various parameters, such as the level of playing difficulty, by offering a range of gadgets covering the different levels. At other times you may need to 'lock' members of a gadget set, i.e. create the situation whereby the selection of any one gadget from the set prevents the selection of any of the remaining gadgets until such time as the selected gadget is 'de-selected' by either the user or the program itself.

At the time of writing Intuition does not automatically support mutual exclusion in Gadget sets. It does however contain routines that enable an applications program itself to manipulate a window's gadget list. This month we will look at three useful routines and give you an example of their use:

AddGadget (window p, gadget p, position) . . . this returns the gadget's position in the list.

RemoveGadget (window p, gadget p) . . . routine returns the position of the removed gadget, or -1 if it could not be found.

window p . . . is a pointer to the window that contains the gadget.

gadget p . . . is a pointer to the target gadget.

position . . . an integer which tells Intuition whereabouts in the gadget list the gadget should go.

AddGadget () and **RemoveGadget ()** do NOT affect the display. To do this another routine, **RefreshGadgets ()**, must be used:

RefreshGadgets (gadget p, window p, requester p) . . . this redraws the gadget list display. (Note: requester_p . . . is a pointer to a requester. If you are not dealing with a requester gadget all you have to do is set the requester pointer to NULL.)

Intuition's Gadgets are defined by a

group of variables which, as a C structure, can be represented like this:

```
struct Gadget
struct Gadget *NextGadget; /* Pointer to
next gadget in list */
SHORT LeftEdge, TopEdge; /* Next four
variables describe the */
SHORT Width, Height; /* location/
dimensions of the select box */
USHORT Flags; /* Highlighting, position-
ing & state flags */
USHORT Activation; /* Flags to deter-
mine gadget behaviour */
USHORT GadgetType; /* Identifies the
gadget type */
APTR GadgetRender; /* Pointer to an
'unselected' Image structure */
APTR SelectRender; /* Pointer to a
'selected' Image structure */
struct IntuiText *Text; /* Pointer to gadget
text if any */
LONG MutualExclude; /* Not currently
implemented */
APTR SpecialInfo;
USHORT GadgetID; /* These last two
fields are ignored by */
APTR UserData; /* Intuition - used just
for our data */
```

Various items in a gadget structure may be altered but, to do this safely, certain rules should be adhered to. The most important of such rules is that you should remove a gadget from the window's 'gadget list' BEFORE you edit any characteristics that Intuition may be monitoring. Once the necessary changes have been made the gadget can be added back into the gadget list.

One of the gadget Flags that is monitored and adjusted by Intuition is the **SELECTED** flag. Sixteen bits are used in the gadget structure for such flags and the bit corresponding to 0080hex (C equivalent is 0x0080) is the one that Intuition uses to tell whether the gadget is on or off. The Intuition header file makes the appropriate definition of **SELECTED** and so to turn a gadget on or off we do this: we remove the gadget from the list, adjust the **SELECTED** bit, add the gadget back into the list and finally update the gadget display.

Under certain circumstances an approach, based on Intuition Requesters, may also be used to automatically block the selection of gadgets at a certain operational level. The technique relies on the fact that when a requester is put up in a window ALL further input to that window is blocked until the requester is satisfied but . . . during this time any requester gadgets that have been brought up can receive information as per normal.

The ideas involved are probably best explained using an example, so here is one which covers most of the elements we have been looking at. The code comes from the gadget handler routine of a 'Brush to Image' converter utility. Its object is to enable a user to load IFF 'brushes', decompress and de-interleave the bitplanes etc. and store the resulting data as a combined Image structure/Image data set. This data can then be incorporated into the graphic displays of other programs. The program loads as a full screen size window display (see figure 1). At the top of the display four gadgets provide the following options:

- A) Read files into a buffer.
- B) Show, i.e. analyse the buffer contents and decode them (if possible), building the equivalent Image data.
- C) Save the decoded buffer contents as combined Image structure/Image data blocks, and lastly
- D) Exit from the program.

A main 'controller routine' monitors the gadgets relating to the highest level of gadget operations. The gadgets being used are boolean gadgets with the **TOGGLESELECT** flag set in the activation flags field (this produces gadgets that turn on when you click on them the first time and turn off when you click on them again). As soon as a gadget from the main menu is hit the address of the gadget is passed to the gadget handling module described in the program listing.

The first job of this module is to identify which gadget has been hit. This is easy to do because suitable values have been set up in the **GadgetID** field for each of

the four gadget structures, i.e. the header file containing the Gadget structure data contained #define statements which give numeric values to the labels READ, SHOW, SAVE and EXIT shown in the highest level case statement of the gadget handler. The Gadget structure's user field, 'GadgetID', is available especially for such purposes.

The variable passed to the gadget handler is a pointer to a Gadget structure. The name of this pointer is 'gadget' so in the code gadget->GadgetID refers to the gadget's identification number. A case statement uses this number to select the appropriate function to perform. Each option, when selected, results in a requester being created as an inner window of the main display (in figure 2 the EXIT option has been selected). Each is so designed that it contains all

the necessary gadgets/text etc. When displayed it becomes the 'work area' of that particular option, effectively preventing the user from selecting (or de-selecting) any of the four main gadgets even though they are still present as part of the screen display.

When an option is selected, the requester is produced which displays or collects the necessary information. During this time the gadget relating to the selected option is 'on', i.e. in the selected state. Once the necessary function has been completed two things must happen: Firstly, the program needs to return to an 'active main gadget menu' state ... this happens automatically when the requester terminates so we do not actually need to worry about this. Secondly, we must get the gadget that had been selected ... 'back into its un-selected state' and

to do this we modify the gadget's SELECTED flag. Once this has been done the gadget handler gives control back to the main program.

The main program, incidentally, has only a few basic jobs. It opens the resources needed, creates the display and then enters a wait loop which puts the program to sleep until user 'does something interesting', i.e. it waits for a user to hit one of the gadgets in the main gadget menu.

To finish, here are the relevant parts of the C source. I have included all the code for the first section of the gadget handler but only the code for the EXIT option is provided since the code for the other three options all follow a similar 'look at any Intui-messages while you do something' arrangement.

P.A.O.

```

/* ===== */
/* Title:          Gadget Handling Module */
/* Ref:            */
/* Date:           27th March 1988 */
/* Programmer:     Paul Andreas Overaa */
/* ----- */

void gadget_hit(gadget)

struct Gadget *gadget; /* routine is passed the address of a gadget */
{
void read_file_option(), show_file_option(), save_file_option(), exit_option();
WORD position;
switch(gadget->GadgetID)
{
case READ: read_file_option();break;
case SHOW: show_file_option();break;
case SAVE: save_file_option();break;
case EXIT: exit_option();break;
default: if (DEBUG) printf("unrecognized gadget case \n");
}

position=RemoveGadget(window,gadget); /* take gadget out of list */
gadget->Flags=gadget->Flags^SELECTED; /* change SELECTED flag */
AddGadget(window,gadget,position); /* put gadget back into list */
RefreshGadgets(gadget>window,NULL); /* show it's true state */
}

/* ----- */

```

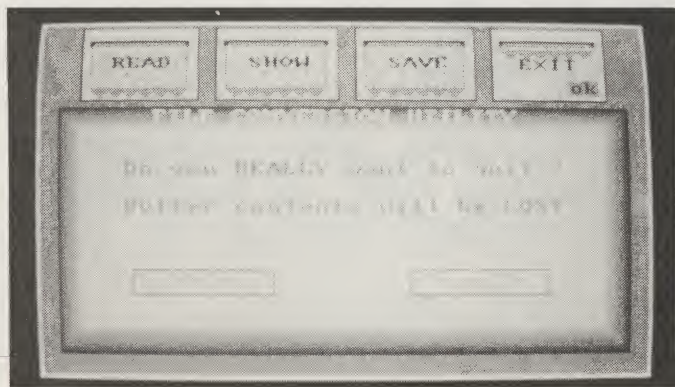



Fig 1

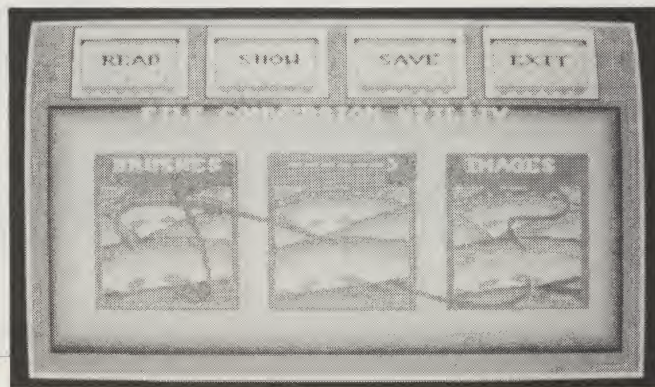


Fig 2

```
void exit_option()
```

```
{
    BOOL Request(),exit_flag=FALSE;
    struct IntuiMessage *message, *GetMsg();

    struct Gadget *gadget;
    ULONG class; APTR object;

    if(Request(&Requester01>window)==FALSE)
        {global_exit_flag=TRUE;if(DEBUG){printf("cannot open EXIT requester \n");}}

    else { do{ Wait(1<<window->UserPort->mp_SigBit); /* Wait for message */

        message=GetMsg(window->UserPort);

        do{

            class=message->Class;                /* Copy the data for our */
            object=message->IAddress;              /* use so we can QUICKLY */
            ReplyMsg(message);                    /* tell Intuition that */
                                                /* we have taken it. */

            switch(class) {

                case GADGETUP:

                    gadget=(struct Gadget *)object;
                    if(gadget->GadgetID==REQUESTER_YES){global_exit_f
lag=TRUE;}
                    exit_flag=TRUE; /* either of the two responses
will do */
                    break;

                default: if(DEBUG) printf("unrecognized EXIT requester
case \n");

            }

            if(exit_flag==TRUE) {message=NULL;}
            else{message=GetMsg(window->UserPort);}

        }while(message);

    }while(!exit_flag);

}

/* ===== */
```


SOFTWARE AND PERIPHERALS LATEST AVAILABILITY LIST

This latest availability list shows the growing quantity of software and peripherals for the AMIGA. It has been compiled by AMIGA User with the valuable collaboration of leading distributors. We are very grateful for the special help we have received from Hobbyte Ltd. Prices include VAT, where necessary and may, of course, be subject to change. Consult your dealer for price confirmation.

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5. Business

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Superbase Professional
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Vizawrite (Desktop)
Wordperfect 4.1
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Drun Studio
Dynamic Drums
Dynamic Studio
Future Sound
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Instant Music
It's Only Rock And Roll
KCS V1.6 Sequencer
Midi Interface
Music Student I
Music Student II
Music Studio
Music X
Perfect Sound
Pro Sampler Studio
Sonix
Soundscape MIDI Interface
Soundscape Pro MIDI Studio
Soundscape Sound Sampler/Digitser
Studio Magic

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Electronic Arts £69.95
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Datel £69.95
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Mimetics £59.00
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SunRize Industries £65.00

8. CAD/CAM/Drawing

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Aegis Draw Plus
Dynamic CAD
Intro Cad
PCB Layout
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Capilano £99.95
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6. Utilities and Languages

64 Emulator
A/C Basic
A/C Fortran 77
Airt Language
APL Programming Language
AssemPro
Aztec C Professional
Aztec C Developers
Aztec C Commercial
Benchmark Modula-2
CLimate
Cambridge Lisp
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9. Other

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Discovery
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10. Peripherals and Accessories

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11. Printers

7 Colour Ink Jet Printer	Canon	£499.00
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A3 6 Colour Pen Plotter	Sektronic SPL 430	£899.00
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12. Disk Drives and Storage

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3.5" Disk head cleaner	Hobbyte	£7.95
External 3.5" Disk Drive	Cumana	£114.95
Supra 20 Mbyte Hard Disk With Clock	Supra	£793.35
Supra 60 Mbyte Hard Disk With Clock	Supra	£1,608.85

13. Books

Advanced Amiga Basic	Compute!	£16.95
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ROM Kernal Reference Manual II	Addison Wesley	£33.20
The Amiga	Microsoft	£16.95
The Amiga Handbook	Sunshine	£15.95
The Amiga System	Precision	£9.95

F-BASIC

continued from page 72

are quite good but some more complex programs would have been useful.

A more serious concern and one that makes F-BASIC totally unacceptable to me as a programming tool, is the license agreement. You are forbidden to sell any program compiled with F-BASIC unless you register it and a fee of ten dollars is payable FOR EACH PROGRAM REGISTERED. You can, however, give programs away or place them into the public domain although SHAREWARE must be registered and a fee paid. I cannot help wondering what I would get for my ten dollars?

In practise I found that the best way to use the compiler was to put it and the library into the RAM: disk device and compile from there. To help speed things up, F-BASIC will default to the name TEST if you enter no filename. I found myself using this method after a very short time, a quick edit and F-BASIC would produce the run time file in a few seconds. When I had a working file, I copied it across to my working disk. The method that I ended up using was to open three windows, one running ED

(F-BASIC does not provide an editor environment) another for compiling and a third for run time testing.

To get some idea of the speed of the compiler in operation I used a simple Mandelbrot plotting program. The screen limits were 640 by 200 points and all other windows were closed, only leaving open the CLI from which the program was run. The timings were as listed below and as a comparison the timings for AmigaBASIC and AC BASIC are also given. The programs are as identical as I could make them given the limitations of each system.

"the F-BASIC program ran 25% faster than the AC BASIC version and the compile time was much faster."

F-BASIC 26 min. 20 Secs

AC BASIC 33 mins

AmigaBASIC 163 mins

As you can see the F-BASIC program

ran 25% faster than the AC BASIC version, and the compile time was much faster. Obviously Run and compile times can vary enormously depending on the type of application but F-BASIC does seem to have a substantial edge.

At £70.00 this is one of the lowest priced compilers that I have seen for the Amiga. It does, however, have some rough corners in need of smoothing off and a lot of work is required. Perhaps subsequent revisions will go some way towards remedying these. My overall impression of the product is favourable as a piece of software, though I doubt if I would recommend rushing out to buy it, mainly due to imposed license conditions.

A.E.

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CRIB CARD 13 AMIGA BASIC COMMAND SYNTAX

OPTION BASE	OPTION BASE <i>n</i>
PAINT	PAINT [STEP] (x,y) [,paircolor-id [,bordercolor-id]]
PALETTE	PALETTE color-id; red, green, blue
PATTERN	PATTERN [line-pattern] [,area-pattern]
PEEK	PEEK (address)
PEEKL	PEEKL (address)
PEEKW	PEEKW (address)
POINT	POINT (x,y)
POKE	POKE i, j
POKEL	POKEL address, value
POKEW	POKEW address, value
POS	POS (x)
PRESET	PRESET [STEP] (x,y) [, color-id]
PRINT	PRINT [expression-list]
PRINT USING	PRINT USING string-exp; expression-list
PRINT#	PRINT# filenumber, [USING string-exp;] expression-list
PSET	PSET [STEP] (x,y) [,color-id]
PTAB	PTAB (X)
PUT	PUT [#] filenumber [,record-number] PUT [STEP] (x,y), array [[index[,index...]]], action-verb]
RANDOMIZE	RANDOMIZE [expression] ;[TIMER]
READ	READ variable-list
REM	REM remark
RESTORE	RESTORE [line]
RESUME	RESUME ([0;NEXT: line])
RETURN	RETURN [line]
RIGHTS	RIGHTS (X\$,I)
RND	RND (X)
RSET	RSET string-variable=string-expression
RUN	RUN [line] RUN filename [,R] SADD (string expression) SAVE [filename [,A;P;B]] SAV "string" [,mode-array] SCREEN screen-id, width, height, depth, mode SCREEN CLOSE screen-id SCROLL rectangle, delta-x, delta-y SGN (X) SHARED variable-list SIN (X) SLEEP
SADD	
SAVE	
SAY	
SCREEN	
SCREEN CLOSE	
SCROLL	
SGN	
SHARED	
SIN	
SLEEP	

CRIB CARD 14 AMIGA BASIC COMMAND SYNTAX

SOUND	SOUND frequency, duration [, volume] [, voice]
SOUND WAIT	
SOUND RESUME	
SPACES	SPACES (X)
SPC	SPC (X)
SQR	SQR (X)
STICK	STICK (n)
STOP	STOP
STRIG	STRIG (n)
STRS	STRS (X)
STRINGS	STRINGS (I,J)
SUB	SUB subprogram-name([formal-parameter-list]) STATIC END SUB EXIT SUB SWAP variable, variable SYSTEM TAB (X) TAN (X) TIMES TIMER ON
TIMER OFF	TIMER OFF
TIMER STOP	TIMER STOP
TRANSLATES	variable = TRANSLATES ("string")
TRON	TRON
TROFF	TROFF
UBOUND	UBOUND (array-name[, dimension])
UCASES	UCASES (string-expression)
VAL	VAL (X\$)
VARPTR	VARPTR (variable-name)
WAVE	WAVE voice, wave-definition
WHILE...WEND	WHILE expression [statement(s)] WEND
WIDTH	WIDTH output-device, [size], [print-zone] WIDTH filenumber, [size], [print-zone] WIDTH [size], [print-zone] WIDTH LPRINT [size], [print-zone] WIDTH window-id[, [title]], [rectangle] type[, [,screen-id]]] WINDOW CLOSE window-id WINDOW OUTPUT window-id WINDOW (n) WRITE [expression-list] WRITE# filenumber, expression-list
WINDOW	
WRITE	
WRITE#	
SWAP	SWAP variable, variable
SYSTEM	
TAB	TAB (X)
TAN	TAN (X)
TIMES	
TIMER ON	

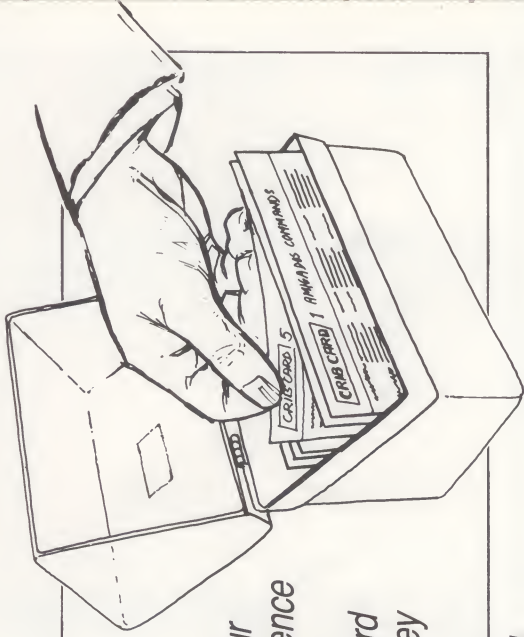
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